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PROPOSALS FOR NEXT STEPS IN PREVENTIVE MEDICINE AND PUBLIC HEALTH *

LOUIS I. HARRIS, M.D.

NEW YORK

It seems to be the traditional privilege of the presiding officer of a section to enjoy wide latitude in the selection of a theme and the manner of its presentation. Taking refuge behind this tradition, I shall presume to touch on a variety of subjects that have to do with public health, preventive medicine and industrial medicine.

An attempt to treat of a variety of subjects in the confines of a brief paper is bound to be hazardous because one must of necessity indulge in generalizations. One cannot round a thought out or present it with lights and shades properly proportioned. There is therefore the danger of being misunderstood and of unnecessarily provoking controversy because one is eager to say much when, in reality, if there were time for a well balanced presentation of each theme there might be a substantial measure of agreement.

THE COMMUNITY FAILS TO DEFEND ITSELF

In various parts of the country, certain groups have organized to oppose fundamental activities in the practice of medicine especially as they relate to the prevention of disease and to research work, or they have sought to legalize cults and fads whose practices, if unrestrained, would seriously jeopardize the public welfare. Time and again, state and county medical society representatives have had to appear before legislative bodies and other assemblies to defend the community against efforts to scrap those phases of preventive medical service which have contributed in a substantial and even to a remarkable degree to minimize or even eradicate diseases such as smallpox, diphtheria, typhoid and rabies.

These efforts to legalize the practice of bizarre and fantastic cults and methods of treatment, and to secure for their "practitioners" the standing of medical practitioners without the benefit of a fundamental medical education, have engaged the efforts of many public spirited scientists in the medical or allied professions.

As soon as one cult is successful, a new group that wishes to exploit a variant of massage or of some "drugless" method of healing arises and clamors for legal recognition.

The eyes of the public have been opened in some degree to the dangers of diploma mills, and efforts to suppress this type of fraud have been supported. We are, however, constantly confronted by those who find diploma mills closed and being therefore unable to achieve a medical diploma by the easy expedient of buying a diploma from mill operators, they then claim that scientific medicine is fallacious and unsound and that they are the originators or the disciples of a new school of teaching, be its claims ever so fantastic and impossible. These groups employ lobbyists and resort to every political and publicity device to help them secure a legal status as medical practitioners.

There have been endless encounters between the medical profession and the lobbyists for the chiropractors, the naturopaths and many other groups who seek a short cut to the title "doctor" and who eschew medical education, seeking commercial profit by serving as "healers" of one kind or another. As a participant in many such conflicts before state legislators, I have come to feel that the situation is anomalous. The medical profession has, by and large, lost neither prestige nor opportunities for service, no matter how many cults have been allowed to practice in any community, nor how great the number of medical pretenders may have been.

I have joined in the defense of the public health when efforts were being made to strip the health officials of their legal right to employ measures which scientific experience had proved to be invaluable in the prevention of disease. The thought has obtruded itself again and again that the medical profession should not bear the brunt of the burden to defend a community against exploitation. The medical profession would of course under no circumstances withhold its aid, or be passive in the face of resistance to the progress of preventive medical science.

It has appeared signally strange that we have not before this brought it home to those who are the leaders of thought in every community that the burden of protecting the community devolves in equal measure on every intelligent and sane person who has the well being of his fellows at heart. The time has come when, ignoring the insane, fanatical or mercenary fringe who seek to exploit the credulous or the psychopaths, we ought to make it clear to every community that it can have only such public health protection as it is willing to fight for. The defense ought not to depend on the medical profession alone.

The cause of public health will be tremendously promoted if physicians serve notice on the influential and well balanced editors, pulpit occupants, leaders of women's clubs, merchant and trade associations, and civic organizations of our respective communities generally, that, in the future, the medical profession will not be subjected to the charge that it is a medical trust seeking to bar out competition, when in reality its effort

* Chairman's address, read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

is to protect the community from pretenders, frauds, charlatans and quacks of all kinds and degree who would mercilessly exploit the public.

When legislation is proposed that threatens the public health, there ought to be a strong and compact organization of those civic groups in the community whose education and civic spirit make them the proper leaders of the public, and they ought to rise and lead in opposing any efforts that threaten the public health. The medical profession should join such groups to make available the scientific facts and knowledge that have been gleaned during the comparatively short period of development of what may truly be termed scientific medicine.

To this end I have proposed to the State Medical Society of New York that there be a meeting organized to which the leading figures of the press, the pulpit, and civic and trade societies, representing both men and women, be called together, and that they be asked to assume the burden of leading in the defense of the community against anything that minimizes the effectiveness of existing public health laws or that threatens to introduce and legalize types of so-called healing which involve danger to health. The medical profession may join with such groups, so far as they are a part of the community, but should not carry the burden in whole or in large part. A permanent state organization of citizens, having counterparts in each county, might serve as minute men and women in defense of public health and of scientific medicine. If this matter is properly presented before the leaders in the community who unite sanity, intelligence and public spirit, it should help mobilize a permanent defensive agency against the repeated threats to public health that occur throughout the country.

PHYSICIANS WHO STAND ALOOF FROM PUBLIC HEALTH

We must not express too great impatience or be too harsh in our judgment if the community as a whole has failed to shoulder the burden of protecting the public health, because we find not infrequently that physicians draw away in a certain haughty aloofness from interest or participation in public health work. Time and again it has been the experience of those physicians who have chosen public health as a career to discover among their confrères a certain air of condescension if not of utter disdain for public health work and those who carry it on. I have frequently encountered physicians who make no disguise of their indifference to public health. Not infrequently a physician has written that he is not interested in this or that public health enterprise on the peculiar ground that he is a surgeon or some type of specialist. What can be expected of the laity, if physicians will not manifest interest in public health? If the practice of a specialty in medicine becomes so narrowing in its influence, it is either a reflection on the excessive lengths to which specialism has gone or else is clear evidence that the physician who disclaims an interest in public health is merely a high grade mechanic. He has not the quality of mind or heart that entitles him to call himself a physician with all that the term connotes by reason both of tradition and of the general expectation that the physician shall of all groups be distinguished for his desire to avert disease and death so far as possible, and to reduce the need for curative work to the lowest possible degree by promoting methods for the prevention of sickness.

CRAZY QUILT PATTERN OF PUBLIC HEALTH ADMINISTRATION

Any one who will undertake to make a comparative study of the health laws, regulations and methods of administration of various states and large cities will be amazed not only by the diversity of practices that obtain but by their contradictory character as well. So long as we differ radically as public health officers with respect to certain basic principles of action, we are open to the criticism that public health administration is a hit or miss game. While public health administration is not an exact art but is conditioned very largely by the personality, ability, vision and resources that the individual health officer commands, still there are certain basic experiences and facts that have evolved out of our trials and errors in public health administration which should be respected by all of us.

In many parts of the country, health officers are so wofully deficient in the fundamental qualifications for the exercise of their functions as to be a constant reproach to the communities that tolerate them and to the profession of medicine that has not led in exposing their unfitness and in removing them from office. Even in very large cities there are few health administrators, to say nothing of their assistants, who have formally qualified by a study of public health science and its practice, such as is now available in those institutions which confer the degree "Doctor of Public Health." It follows from the facts that are implicit in this statement that the rules and regulations established for the government of various communities differ in most important essentials and defy logic and experience in many instances. It is inconceivable, for example, that in the World War our army and navy departments would have left it to each commander of a medical unit to formulate independently sanitary, hygienic and medical regulations as the spirit moved them. There was a central organization and a standardized procedure. The quick marshaljng of our forces and the lack of prolonged discipline and practice in the enforcement of these regulations may have led to performances varying greatly in quality and in effectiveness, but at all events there was a common language, a basically uniform procedure and regulations, that did not clash. A certain amount of standardization of public health administration procedure is inevitably and most urgently needed. Until we do codify our experience and present a unified attitude with respect to basic activities in public health, we shall be targets for jibes and richly warranted criticism.

No better example of the effects of lack of unity in health regulations is provided than may be found in milk and food regulations, and in those which relate to the control of communicable disease. There are some communities in which not only milk regulations but what is more important than regulations, the machinery for enforcing them, is so feeble or misdirected as to constitute a constant potential source of danger to large numbers. The Montreal typhoid situation, of which little has been said in the medical press, should not be so easily forgotten. It is a source of wonder that some of the families of those who suffered from typhoid, enduring much physical agony and the great expense that this sickness involves, and more especially those families that suffered the loss of a breadwinner, did not sue the city authorities to recover damages for their failure to prevent a typhoid epidemic, which, in the light of modern knowledge, could and should have been

prevented. One lone newspaper in Montreal, several months before the typhoid outbreak, championed the adoption of stringent milk regulations comparable to those which have come to be regarded as standard regulations by the cities that are progeressive so far as efficiency in public health administration is concerned. It is taking people a long time to awaken to their legal responsibility to prevent diseases that are preventable.

It seems to me, in the light of these considerations, that federal legislation is needed to establish an independent federal department to guide and to coordinate public health activities, be they of an administrative or of a research character. This is long overdue. Without invading state rights, a federal department of health might very well have the effect of establishing standards in public health work analogous to the service that is rendered by the Bureau of Standards with respect to basic weights and measurements.

In this paper I cannot enlarge on the variety of functions which such a federal health department would serve, if it had ample resources for research, for advising and guiding state and local health departments and for acting as a coordinating agency among the various health groups in the country who now speak and think in most confused terms, and who are most pathetically divided in the methods and character of their practices. When economy seems to be so large a claim to distinction of the arbiters of our national affairs, it is amazing that the bureaus, divisions and laboratories having health functions dispersed among the various departments of the federal government have not been united for the sake of economy of money and effort and of the strength that makes for unity.

It might very well follow, too, that standards for budgets for official health service would be established by a federal department of health which would not be influenced by local political and partisan considerations but would represent a dispassionate, detached, impersonal and fair-minded view based on the widest possible knowledge and experience. More and more the bonds that unite us to our most distant brethren in the nation are being made more intimate and vital through the avenues of travel and commerce and justify a national coordination that does not wait for a sweeping epidemic before it comes into play as an instrument for national defense against the invisible foes of society.

It might then follow that the qualifications of those who are to do public health work would be so defined by a federal health department, by reason of freedom from local interest, that only those having the precise academic and technical knowledge and experience which qualify a person for public health administration would be called to positions of command. And it might also plausibly follow that the tenure of office of public health administrators having proper qualifications as established by a federal health department would not be subject to political turnovers and be abruptly terminated as determined by caprice or shifting political winds, as recently demonstrated in Chicago.

The position of public health officer in England is one which, so far as tenure of office, salary and training are concerned, is in striking contrast to the chaotic conditions that prevail in this country.

Public health officers in this country will continue to occupy an anomalous and precarious position until the rate of remuneration which they receive, as well as their security in tenure of office and their insurance against sickness and old age, will relieve them of a constant and harrowing fear and change them from what they now are, a sort of body of adventurers who wander over the face of the country, finding temporary employment and refuge as best they can.

COLLEGES AND HOSPITALS IN RELATION TO PUBLIC HEALTH

It would be most desirable if health centers were conducted by health departments at medical schools as a cooperative effort for purposes of teaching. Students will never acquire a wholesome respect for public health work and be its active allies unless they serve an apprenticeship in field and clinical work in relation to public health and learn from experience how certain preventable diseases can be prevented.

Boston has made an excellent beginning in connection with well-baby clinics. The teachers in the pediatric departments of the respective medical schools man the medical service of these well-baby clinics, and the students are given a close and intimate view of the correlation between preventive medical service and the practice of medicine.

This will make for the mobilization of all health and medical services into as few units as possible, or, to put it differently, it will prevent their dispersion. The hospitals are too frequently merely casualty stations. They ought to serve as health centers as well, and provide facilities for the conduct of the varied types of treatment and service that are now familiar public health functions.

INDUSTRIAL HYGIENE, THE CRETIN OF PUBLIC HEALTH MEDICINE

In spite of our tremendous advances in industrial development throughout the country, there has been comparatively little growth in industrial hygiene as distinguished from what is essentially first aid service in industry. There are a few noteworthy exceptions. Of intensive work in industrial hygiene conducted by municipal health departments, there is little or no evidence.

In New York City, attention has recently been drawn to the fact that a group of workers who are handling radium compounds suffer from a condition that was at first mistaken for phosphorus poisoning. Several of these workers have been crippled by the effects of radium poisoning, or have died as a result of this occupational disease. In connection with this occurrence, it is alleged that some who have had familiarity with the study of occupational diseases have been more anxious to minimize the effects of this poison than to speak out in the frank and fearless way that is so essential if conditions which are gravely menacing to health and life are to be dealt with in a constructive and humane way in the future.

Compensation laws enacted by various states have stimulated the provision of surgical care to injured employees. While this service has shown certain serious defects, these laws had a wholesome and desirable influence. Only when the direct as well as the indirect effects of industry in causing disease are recognized by leaders in medicine and social work will legislation be adopted to compensate persons who have suffered from specific occupational poisonings, or from the indirect effects of an improper industrial environment or lack of suitable safeguards for the health of workers. This alone will accelerate the development of industrial hygiene as a feature of official and private health service. In this country, industrial hygiene still remains the cretin of preventive medical activities.

INDUSTRY ITS OWN HOUSEKEEPER

Finally, I desire to call attention to the fact that many industries not only put a great tax on existing health agencies by their failure to prevent disease among their employees, thus throwing thousands of human beings who are part of the industrial army of this country into the social scrap heap year after year, but also add to the burdens of municipal housekeeping in that they create neighborhood nuisances as a result of the unnecessary emission of cinders or dust of one kind or another. They are thus deliberately and blindly creating resentment among masses of persons in the community who hold the local health administrators to account for this. Eventually, such offenders will be shown up not only as bad neighbors but as unwise business men in needlessly destroying the good will of the public.

While this is true in varying degrees of certain large cities, there is one aspect of industrial housekeeping that concerns factories, whether they are located in rural sections or in the most densely packed cities; namely, food establishments. Filth and dirt in the manufacture of bread, pastry and candies and in the handling of milk, the tolerance of poultry and fowl that are unfit for human consumption and their use in the preparation of broths for invalids or in canning various forms of chicken that may be served at sociables, in restaurants or in hospitals, constitute an unwise policy. Too great a dependence is placed by some industries on their ability to get by without being detected. The forward-looking, progressive industries are those which will in increasing measure disdain to place reliance on local or state health officials but will put their house in order of their own initiative and show regard for sanitary practice in the purchase, the handling and the manufacture and distribution of foodstuffs, because it pays rich dividends in the long run to win public confidence and respect.

As industry comes to realize that sanitary codes are after all only minimum provisions of law that are to be applicable to the lowliest as to the highest type of establishment, it will set up its own standards of housekeeping and make it known that it is doing more than merely complying with sanitary code requirements.

I would deem public advertising with respect to honest and rigorous efforts to maintain high sanitary standards in one's own industry as worthy of the greatest commendation and support. Moreover, health officers will be relieved of a tremendous burden if not only the manufacturers of foodstuffs but the owners of restaurants, lunch rooms and food establishments of all character join in recognition of the principle that it pays to win public confidence by doing one's own housekeeping without being policed by official agencies. I speak of this feelingly, because in various communities there are many things that are done which may have serious effects on public health and of which the medical profession knows little. I know from experience, for example, that the medical profession may from time to time be dealing with mild or severe arsenic poisoning resulting from the ingestion of fruit or vegetables that have been sprayed with parasiticides containing arsenic salts. The failure to cleanse properly such fruit or vegetables in order to remove toxic substances may cause puzzling and mysterious outbreaks of gastro-intestinal or other clinical manifestations. A variety of similar factors that make for disease may defy detection and add measurably to the volume of illness in a community. This random example indicates that many unfamiliar factors make for disease with which a public health administrator has to grapple. They will be dealt with most effectively only when the food industries of this country especially realize that they should not depend on public health administrators to keep their houses in order for them but ought to provide of their own accord the machinery for effective housekeeping. In the long run this is bound to pay tremendously rich dividends and be a source of great protection to the public health.

175 Riverside Drive

LOW BACK PAIN*

JOHN T. O'FERRALL, M.D.
NEW ORLEANS

The subject of this paper suggests the reason for an extremely large number of patients now under treatment by physicians in all branches of medicine and surgery, from the rural physician to the most highly trained specialist. It is at once obvious that the available space hardly permits of even a brief mention of the numerous causes of low back pain, to say nothing of a discussion of them. The frank symptoms of fractures of the spine, osteoarthritis, malignant metastases, and Pott's disease are so well known that they need only to be called to mind in passing. The pains in the lower spinal segments ascribed to focal infections, pelvic or uterine disorders, prostatic enlargement, whether malignant or benign and syphilis represent subjects of much importance worthy of prolonged individual discussion.

It has seemed to me that, in the past, too much stress has been laid on bony abnormalities of the low spine as an explanatory cause of many backaches, and the rôle played by the soft parts in its causation has been, to some extent, slighted. It is also believed that the relationship of the various bony structures to one another and to the attached soft parts have not received the consideration deserved. Some excellent articles stressing the involvement of these structures are to be found in the literature, by Brackett,[1] Lowman[2] and others. It is my purpose in this paper to call attention again to this common cause of low back pain, thus supplementing a previous paper.[3]

A review of the anatomy of the lumbosacral joint will indicate, principally, that we are dealing with a very unstable articulation. The superior surface of the sacrum inclines downward and forward, from 35 to 60 degrees, when the person is standing erect, depending on the tilting of the pelvis and the lordosis developed. The inferior surface of the fifth lumbar vertebra is almost horizontal, tilting only slightly, probably from 10 to 15 degrees. The articular processes on the sacrum and the fifth lumbar vertebra come together, despite the very thick wedge-shaped intervertebral disk, and furnish the only bony stability of the joint. These articular processes vary in shape and may be flat or crescentic. If the normal crescent shaped process exists, greater stability to the lumbosacral joint is given. One of each of the shapes may exist at this

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* Read before the Section on Orthopedic Surgery at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 15, 1928.

1. Brackett, E. G.: Low Back Strain, with Particular Reference to Industrial Accidents, J. A. M. A. **83**: 1068 (Oct. 4) 1924.
2. Lowman, C. L.: Rôle of Iliolumbar Ligaments in Low Back Strains, J. A. M. A. **87**: 1002 (Sept. 25) 1926.
3. O'Ferrall, J. T.: J. Bone & Joint Surg. **4**: 384 (April) 1922.

joint, a normal strong crescent shaped on one side and an abnormal weak flat shaped on the other side. Such a condition suggests a potential strain of the attached ligaments on the weak side. These articular processes slide one on the other on forward bending of the spine and prevent the fifth lumbar vertebra from sliding too far forward on the sacrum. Should they pass each other and thus lose contact, the stability of the joint devolves on the ligaments and muscles. Momentary relaxation of the latter, occurring on an impending effort, such as lifting heavy weights or pulling while bending forward, passes the burden of stability entirely to the ligaments, resulting in a real sprain of nonelastic tissue.

The chief ligaments of this articulation, it must be remembered, are long and slender, and are composed of nonelastic fibrous tissue. They are the two lumbosacral ligaments, arising from the lower front part of the fifth transverse process and attached below to the lateral surface of the top of the sacrum; and also the two iliolumbar ligaments, arising from the tip of the fifth transverse process and attached to the crest of the ilium. Calve and Goldthwaite have proved that 50 per cent or more of the motion of the trunk below the dorsal region is made at the lumbosacral articulation. It can therefore be seen in what danger these four long, slender ligaments lie around this structurally weak joint when the muscle protection is lost even for a moment, as it relaxes preparatory to a severe muscular exertion and usually the patient is in the flexed, semiflexed or twisting attitude, positions that are vulnerable to ligamentous strain.

Any attempt at an anatomic description of this complicated joint is incomplete without including the important nerve structures. The lumbosacral cord is made up from branches of the fourth and fifth lumbar roots, and supplies sensation to the buttocks and to the anterior and posterior aspects of the thigh; in fact, it furnishes the so-called sciatic distribution. It passes just under the fifth lumbar transverse process and is in intimate contact with the iliolumbar and lumbosacral ligaments.

It is not intended in this paper to ignore the bony abnormalities in the lumbosacral segment of the spine or to minimize their importance in producing symptoms. The stability of the joint is entirely dependent on the normal anatomic structure as a whole, the bony formation as well as the soft parts. Elongated or irregular fifth lumbar transverse processes, abnormally shaped articular processes, sacralized transverse processes and incomplete spina bifida, the most common of the congenital abnormalities, undoubtedly weaken this already unstable joint and many times precipitate the acute symptoms. I believe, however, that their existence cannot alone account for the symptoms of back strain and that they do not represent the real pathologic condition of the strain. These abnormalities are a contributing cause, but the ligamentous and neurologic soft parts are the structures in which lies the real pathologic condition.

We are therefore familiar with the variations in the size and shape of the fifth lumbar transverse processes and articular processes. It has been found, however, that these variations slightly influence the ligamentous and muscular attachments and may either strengthen or further weaken this joint.

The foregoing brief remarks on the anatomy of the lumbosacral joint indicate definitely that it is a pivotal joint on which devolves the greater part of the motion of the trunk on the pelvis, the pivotal motion being produced by muscle contraction and expansion, but being controlled and limited by two articular processes of uncertain or irregular size and shape and the ligamentous guy ropes, which are slender but powerful and firmly attached. When in the erect position, the poise or posture of the body is maintained largely by the muscles assisted by the articular processes, the ligaments in this position being largely free from their duties of stabilization. However, in the position of forward bending, the lumbar spine is flattened, which renders the lumbosacral articulation (fairly horizontal in the standing position) entirely vertical, calling on the ligaments for the stability of the joint, supported by the flattened, stretched muscles in and around the lumbar spine. While the trunk, in this position of forward bending at varying angles up to a right angle to the pelvis, is a heavy load to hold, yet these lumbosacral ligaments are designed to maintain stability so long as the muscles assist and extra weight is not added; but should the muscles relax for a second, the entire burden of maintaining stability of the joint in that position falls on these lumbosacral ligaments. It is generally in the stooping or twisting positions that momentary relaxation of the posterior muscles of the spine occurs, preparatory to severe or extreme muscular exertion, for example, lifting or pulling. The problem of stability then devolves on the nonelastic ligaments which are sprained by the weight of the torso and the extra added weight. The result is invariably a real ligamentous sprain, as occurs in the lateral ligament of the ankle. The same type of structure is involved (nonelastic tissue), the onset is sudden (acute stabbing pain), the pain quite intense and, it is rational to believe, the same acute swelling and hemorrhage occur. The swelling, hemorrhage and edema in and around these ligaments, between which the lumbosacral cord passes, are sufficient to produce pressure on them and produce the referred pain along the sciatic distribution of those parts supplied by the fourth and fifth lumbar nerves. The lateral spinal muscles are thrown into spasm in order to protect these sprained ligaments and thus do fix the lumbosacral joint and lumbar spine. Untreated or improperly treated acute sprains of this type often become chronic and account for the prolonged symptoms. Organized hemorrhage, fibrous adhesions and real scar tissue on nerve structures represent the gross pathologic changes. It is the prolongation of such conditions that drives these patients to the osteopaths and chiropractors.

The history of the majority of these patients with back pain indicates that the disability is of sudden onset. Acute, stabbing pain in the low back is noticed when attempting some muscular effort and when in the position of forward bending. The patient further states his immediate inability to assume the fully erect position, probably because of the immediate protective tonic spasm of the lateral lumbar muscles, further contraction in assuming the erect position causing added pain.

If careful search is made when examining these cases, it is rarely that we find a patient who has no active intercurrent infection. The focus may be any of the well known foci which offer ample opportunity to be cleared up. I agree entirely with Osgood that the toxins elaborated in the intestinal tract contribute frequently to the prolongation of the symptoms. The intestine has received scant attention but will be found to play a very large rôle as a focus of absorption. Liga-

ments and muscles bathed in old hemorrhage and in tonic spasm offer a fertile field for the toxic substance to attack. Elimination of this focus or other foci of infection or toxemia is at once indicated. The examination of these cases reveals a fact worth noting but somewhat contrary to previous teaching. The tenderness elicited over the lower spinal segment is not over the sacro-iliac joint, as is so often stated, but over the "lumbosacral angle"; namely, the angle formed on both sides by the lumbar spine, the superior aspect of the sacrum and the crest of the ilium. This tenderness can, in the majority of instances, be exactly located at the lateral surface of the top of the sacrum, or the attachment of the lumbosacral ligament. General tenderness can practically always be made out in the lumbosacral angle.

Straight leg raising and hyperextension of the thighs, by putting further tension on the muscles already in spasm and by increasing the lordosis and further strain on the ligaments, produces increased pain. The cross-leg test suggested by Smith-Peterson and others as an almost infallible test for a strained sacro-iliac joint is almost always negative.

The referred pain is not always confined to the so-called sciatic distribution alone but varies in location and severity, depending on the nerve tracts of the lumbosacral cords pressed on by the swollen ligaments, organized hemorrhage or pannus formation. Along the crest of the ilium into the lower quadrant of the abdomen is a common site of pain. This may extend into the vulva or testis. The outer, inner or posterior aspect of the thigh may alone be painful or all together. The deep tissues near the bone may be alone involved. The popliteal space and straight sciatic distribution may be complained of. The location of the referred pain varies greatly with each patient.

The x-ray investigations in the majority of these cases do not reveal any pathologic condition of the bone. Calcification of the lumbosacral ligaments may occur in the young adults; also the congenital malformation often complicates the picture. Arthritis is found in older subjects but is not taken up as a part of this paper. Stereoscopic and careful lateral views (profile) of the lumbosacral joint are essential. The position of the fifth lumbar body on the sacrum, the angle of the superior aspect of the sacrum, and the shape of the articular processes are some of the important facts brought out in such pictures.

In the treatment of these ligamentous back strains one often overlooks the fact that a true sprained ligament is being dealt with. When marked muscle spasm exists, rest in the Buchholz position (45 degrees of straight leg raising with extension) is generally effective and at the same time the ligaments are free from tension and are at rest. Fixation of the lumbosacral joint is then carried out by application of a plaster jacket, adhesive plaster strapping (transversely and obliquely applied over the pelvis and lumbar spine) or a very wide lumbosacral belt of webbing. It is frequently the case that adhesive plaster strapping is in disfavor with many physicians and patients because of its improper application. It cannot be properly applied with the patient standing and is of little value in relieving pain unless the pelvis is fixed to the lumbar spine.

In prolonged, obstinate cases in which the referred pains persist, epidural injections of saline solution and procaine hydrochloride into the sacrococcygeal foramen assists greatly in giving relief. This procedure, as shown by Ellsburg and others, is easy to perform and is most effective. One injection is generally sufficient, but it may be repeated a number of times without fear of any but beneficial results, when only saline solution is used.

CONCLUSIONS

1. The majority of the acute and many of the chronic backaches occur in young adults below the age of 45 as a result of sprain of the lumbosacral ligaments.

2. The strain generally occurs more frequently in males engaged in laborious work, athletics and others in awkward posture, namely, flexion, semiflexion and twisting of the torso, especially on impending muscular effort, as lifting and pushing.

3. The lumbosacral joint is normally a most unstable joint and in studying its anatomy insufficient emphasis has been placed on the ligamentous "guy-rope" and the relation of the bony structures to one another, whereas undeserved importance has been given to the bony abnormalities.

4. Gross pathologic changes exist, as hemorrhage; fibrous adhesions or pannus formation and swelling of the ligaments with pressure on the lumbosacral cord and other parts of the lumbar plexus; protective tonic spasm of the lateral spinal muscles from nerve pressure, and often toxic absorption.

5. Flat roentgenograms are of little value. Stereoscopic and lateral views of the joint are very helpful and probably essential.

6. Treatment to be effective must represent fixation of the lumbar spine to the pelvis, thoroughly carried out and prolonged for a sufficiently long time to permit healing of the truly sprained ligament and resolution of the pathologic changes that usually occur.

3411 Prytania Street.

ABSTRACT OF DISCUSSION

DR. F. J. GAENSLEN, Milwaukee: Dr. O'Ferrall gave an excellent explanation of many of the low back pains that we have to deal with, and has rightly emphasized that the great majority of such pains are referable to the lumbosacral region. The anatomic condition that he has described so well shows plainly that it is a point of potential weakness and strain. I did not hear him say anything about the sacro-iliac joint, but when we consider low back pain both the lumbosacral and the sacro-iliac joints come to mind immediately and it is a question of differential diagnosis between them. One of the tests that I have found to be very reliable, when it is present, is the compression test with the patient lying supine on the table. The operator bends over the patient on the table and compresses the iliac crests with his hands. If this maneuver causes pain in the back and referred down the leg, one can be certain that one is not dealing with a lumbosacral lesion, because that portion of the anatomy of the patient has been undisturbed. Likewise, if one places the hands on the inside of the crests and cause a separation of the iliac bones with pain referred down the leg, it is rather definite evidence that the sacro-iliac joint rather than the lumbosacral joint is affected. An additional test is to have the patient lie supine on the table with the hip and knee acutely flexed, the patient grasping the knee very firmly with both hands, fixing the lumbar spine on the table. Then the examiner hyperextends the opposite leg over the side of the table. By means of the rectus muscle attached to the antero-inferior spine and the Y ligament reinforcing the capsule of the hip joint, a very powerful rotational force is exerted on the iliac bone of that side in the direction in which motion normally takes place. If localized pain or pain referred to the leg is felt, one can be certain that it is a sacro-iliac and not a lumbosacral lesion. I should like to emphasize the importance of the position of the lumbosacral facets rather than their shape. Of course, the shape is important, but the position of the facets is more so—whether they are in the stable coronal

plane, enabling them to prevent a telescoping of the trunk into the pelvis, or in the less stable sagittal position. There may be the sagittal position on one side and the coronal on the other, in which case a potential weakness is apparent. We find 90 or 95 per cent of the low back pain referable to the lumbosacral joint in the cases not due to osteartheritis, injury or infection. The localization of the tenderness is very important. There is one condition which I would like to have Dr. O'Ferrall say something about, and that is reverse spondylolisthesis. When the fifth lumbar slides down on the sacrum, typical spondylolisthesis results. In the type referred to, however, it is the sacrum which creeps under the fifth lumbar. The upper posterior margin on the first sacral segment bears practically all the weight on the undersurface of the fifth lumbar. It is an important group and operative intervention in this type should very frequently be resorted to.

DR. R. M. SCHAUFFLER, Kansas City, Mo.: I have added Dr. Gaenslen's test to my regular routine and find it very serviceable. I noted years ago that there were some sacro-iliac cases in which the pressure had to be brought down nearly to the tip of the sacrum instead of to near the top in order to relieve the painful pressure. We have stopped saying sacro-iliac and lumbosacral with quite so much exactness, and we say a low back sprain or a low back pain. Then we have to decide whether the patient's condition is principally mechanical or inflammatory. Sometimes both conditions are present, or one is superimposed on the other, but it is quite important to decide which is which, in order to institute proper treatment. The fixation of the pelvis is important, with backward pull on the iliac crest against the sacral pad, which must really be a sacral pad and not a big, flat piece of leather on the back of the pelvis that spreads all over it. The lumbar spine must be immobilized to get results. After manipulation under an anesthetic to overcome the muscle spasm the parts can usually be put in their anatomic position. The crux of the whole matter is to decide in what position to immobilize the lumbar spine. The build of the individual will determine that; I have used three different positions on three men of different build with the same symptoms of acute low back sprain and muscle spasm and with secondary sciatica bad enough to require some sort of manipulation: One was suspended; one was lying on the abdomen on the strip, and one had the sacrum pushed up and no support under the lumbar spine. The problem is to figure out the easiest position in which the downward thrust of the weight of the body through the lumbar spine will relieve these bruised or strained ligaments. It makes no difference how tightly the support is wrapped around the pelvis; unless one fixes the lumbar spine in the most ideal position for the particular patient under treatment one is not going to get results in a bad case.

DR. J. T. O'FERRALL, New Orleans: I am glad to hear it said that we are not using the term sacro-iliac so frequently in diagnosis. I think it is comparatively rare; in fact, very rare except in cases of extreme trauma. Dr. Gaenslen mentioned the separation of the crests of the ilium in order to elicit pain in the sacro-iliac joint. This is almost the same as the test suggested by Smith Peterson, namely, the cross leg test, which is external rotation of the hip with the ankle on the opposite knee and in which pressure on the knee and the crest of the ilium causes practically the same separation of the pelvis. I believe, however, that attempted separation of the crests of the ilium can cause pain in the lumbosacral joint because more tension is put on the iliolumbar ligaments, and I do not believe that it absolutely indicates a sacro-iliac disease. I have never been much of a believer in sacro-iliac disease because so many women have difficult deliveries without ever having any pain in the sacro-iliac joints, and there must be some separation of those joints during the delivery. Again, some very difficult labors require that the symphysis be divided in order to get a larger pelvis outlet, which entirely does away with the anterior fixation of the bones of the pelvis, and must give additional motion to the sacro-iliac joints. Those women also, in many instances, do not have pain in the sacro-iliac joint. I believe that real sacro-iliac disease must be produced by a very severe trauma.

THE ANTITOXIN TREATMENT OF ERYSIPELAS

RESULTS IN SEVEN HUNDRED AND FIVE CASES AT BELLEVUE HOSPITAL

DOUGLAS SYMMERS, M.D.
Director of Laboratories, Bellevue and Allied Hospitals
NEW YORK

Since the introduction of the antitoxin treatment of erysipelas by Birkhaug [1] in 1926, comparatively few cases have been subjected to trial, Birkhaug having treated a series of sixty and Symmers and Lewis [2] a series of 131 patients. At Bellevue Hospital for the past sixteen months we have employed the antitoxin treatment of erysipelas to the exclusion of all other methods. The present report is based on a year's experience and represents a critical analysis of the results obtained in 705 consecutive patients—a number which is sufficiently large, I think, to permit one to postulate certain conclusions with a degree of assurance, to point out the limitations of this method of treatment, to depict those occasional circumstances in which it is a failure, and, finally, to compare the results with those obtained in a somewhat smaller but sufficiently comprehensive series of patients treated without antitoxin during the previous year. In the latter connection, it is to be noted that, although 705 patients were treated in 1927-1928 and 585 in 1926-1927—a discrepancy of 120—this is in consonance with the experience of the past twenty-four years in Bellevue Hospital, where the total number of patients treated each year has been known to fluctuate between 362 and 997, with an average of 668.

THE SERUM: ITS PREPARATION, INJECTION AND DOSAGE

Throughout these observations we have employed an antitoxin furnished by the Lederle Antitoxin Laboratories, in the preparation of which horses are immunized by subcutaneous injections of gradually increasing amounts of erysipelas toxin and by the intravenous injection of different strains of the streptococcus of erysipelas.

For the introduction of the antitoxin into the body we employ the intramuscular route exclusively. At the outset we essayed to use the antitoxin intravenously, but, in one of a series of seven cases so treated, the patient, an alcoholic subject, immediately developed an alarming degree of anaphylactic shock from which he recovered, however, in the course of one and one-half hours. In a second case, involving almost the entire trunk of an obese woman whose muscles could not be reached by the hypodermic needle, her son, a physician, asked that antitoxin be given intravenously as a last resort. Two hours after injection, the patient developed cyanosis and edema of the lungs, and death occurred in a short while. Taking this and other experience into account, we feel that the intravenous use of antitoxin is not only unnecessary but dangerous and that the intramuscular is the route of preference.

Early in our experience and for a number of months thereafter, we employed an unconcentrated product, but abandoned it later for a concentrated and clarified antitoxin which could be given in smaller doses. The unconcentrated antitoxin was injected in doses of 25 cc. and the concentrated in 10 cc. amounts. The only apparent advantage in using the concentrated and clari-

1. Birkhaug, K. E.: Erysipelas, J. A. M. A. **86**: 1411 (May 8) 1926.
2. Symmers, Douglas; and Lewis, K. M.: Antitoxin Treatment of Erysipelas, J. A. M. A. **89**: 880 (Sept. 10) 1927.

fied product is to be found in its lesser bulk, since with the unconcentrated and the refined products the percentage of cases of subsequent serum sickness was much the same, while the results with the two serums were apparently identical.

The dosage of the antitoxin is to be determined in each case, since there are several factors which enter into the patient's reaction, such, for example, as the duration of the disease before the institution of treatment, the patient's resistance, the virulence of the infective micro-organism and, most strikingly of all, the part of the body involved. The earlier a patient comes under treatment, the more promptly, of course, is arrest of the disease to be expected, and it is likewise to be anticipated that the vigorous and temperate will yield to treatment more easily than the old, the debilitated and the debauched. On the other hand, in infants and children, even those who are well nourished and apparently in perfect health, the antitoxin treatment of erysipelas sometimes encounters stubborn and discouraging resistance. In the matter of distribution, we have found that the interval of treatment in facial erysipelas is far shorter than in erysipelas involving the body, which sometimes is most unyielding. In both instances, however, the period of disability is, in the great majority of cases, absolutely reduced as the result of the antitoxin treatment. Finally, in the matter of dosage, we have but one fixed practice to commend, namely, to administer the antitoxin in excess rather than to attempt to minimize the dose and to give it in full therapeutic amounts, no matter what the age of the patient, repeating at intervals of twenty-four hours until there is noticeable improvement in the local condition; that is to say, until the inflammatory process becomes localized and the edema begins to disappear, the normal wrinkles of the part reasserting themselves. At Bellevue Hospital we depend entirely on changes in the local lesion to determine the cessation of treatment, paying no attention whatever to the patient's temperature. In the milder cases we are frequently able to control the disease by the administration of a single therapeutic dose. In more severe cases it may be necessary to give from two to four or even six doses, and, finally, in a small but nevertheless important percentage of cases we have found, oftenest in body erysipelas but sometimes in the facial variety, that the disease is absolutely beyond control, no matter how much antitoxin is given. In such circumstances we have sometimes given as many as twenty-five injections to a single individual. Latterly, however, we have discontinued the prodigal use of antitoxin in resistant patients. If there is no noticeable improvement in the local condition after a maximum of eight injections, or if the inflammatory process continues to migrate in spite of measures to the contrary, the antitoxin treatment is discontinued and the patient is abandoned to such simple devices as topical applications.

TABLE 1.—*Facial Erysipelas*

563 cases of facial erysipelas treated with antitoxin at Bellevue Hospital between May 5, 1927, and May 4, 1928

92.1% cured in 2 to 7 days
1.9% cured in 8 to 14 days
0.8% uncontrollable
4.9% died

Cured in	Number of Cases	Per Cent of Total
2 days	55	9.7
3	82	14.5
4	157	27.8
5	117	20.7
6	81	14.3
7	27	4.7
8	2	0.3
9	5	0.8
11	2	0.3
14	2	0.3
Uncontrolled	5	0.8
Died	28	4.9

489 cases of facial erysipelas treated without antitoxin at Bellevue Hospital between May 5, 1926 and May 4, 1927

26.7% cured in 3 to 7 days
49.2% cured in 8 to 14 days
15.1% cured in 15 to 53 days
8.7% died

Cured in	Number of Cases	Per Cent of Total
3 days	3	0.6
4	21	4.9
5	23	4.7
6	35	7.1
7	46	9.4
8	46	9.4
9	41	8.3
10	53	10.8
11	27	5.5
12	25	5.1
13	27	5.5
14	22	4.4
15	11	2.2
16	6	1.2
17	4	0.8
18	7	1.4
19	3	0.6
20	7	1.4
21	5	1.0
22	4	0.8
23	3	0.6
26	1	0.2
27	3	0.6
28	3	0.6
29	1	0.2
30	4	0.8
31	3	0.6
33	1	0.2
43	1	0.2
46	1	0.2
47	1	0.2
48	1	0.2
49	2	0.4
51	1	0.2
53	1	0.2
Deaths	43	8.7

Another cause for failure is not uncommonly to be found in the timidity of certain practicing physicians in the matter of using serum. Dr. Lewis, who collaborated with me last year in the treatment of 131 cases of erysipelas at Bellevue Hospital and who since that time has seen numbers of extramural patients in consultation, has encountered several disappointing results, due, he thinks, to delay in placing the patient under treatment, failure to inject the antitoxin intramuscularly, and insufficient dosage. As pointed out elsewhere in this paper, the element of danger from anaphylactic shock, if the antitoxin is introduced intramuscularly and not intravenously, is negligible, while, in the matter of dosage, full therapeutic measures are to be used from the outset and repeated at intervals of twenty-four hours until improvement in the local lesion becomes manifest. In other words, in order to obtain the best results the antitoxin must be employed properly. This does not unduly tax one's intelligence, and yet there are those who, failing to follow simple instructions, encounter failure and are then prone to discredit the antitoxin treatment of erysipelas as worthless.

Finally, it is to be pointed out that, even by the intramuscular method of injection, immediate and unpleasant reactions are sometimes encountered—only once, thus far, in our experience in Bellevue Hospital and then in the form of a chill lasting about twenty minutes. Nevertheless, as a routine procedure we commence treatment without any preliminary flourishes in the direction of desensitization, not only in patients previously untreated but in those with recurrent erysipelas whose antecedent attacks have been combated by antitoxin.

RESULTS

Among the present series of 705 patients, there were 563 cases of facial erysipelas and, as shown in table 1, 92.1 per cent of the patients were cured in from two to seven days and 1.9 per cent in from eight to fourteen days, while in five patients, or in 0.8 per cent, the disease was uncontrollable even when full doses of antitoxin were administered over a period of many days, so that eventually its use had to be abandoned. Of the 563 patients, twenty-eight, or 4.9 per cent, died. On the other hand, in a series of 489 patients with facial erysipelas treated without antitoxin during the previous years, 26.7 per cent were cured in from three to seven days and 49.2 per cent in from eight to fourteen days,

while 15.1 per cent required from fifteen to fifty-three days and death occurred in 8.7 per cent.

In a series of 142 patients with corporal erysipelas treated by antitoxin, as shown in table 2, 78.1 per cent were cured in from three to seven days, 9.8 per cent in from eight to fourteen days, and in 3.5 per cent the disease was totally uncontrollable; death occurred in 8.4 per cent. In a series of ninety-two patients with body erysipelas treated without antitoxin during the previous year, 18.4 per cent recovered in from four to seven days, 42.3 per cent in from eight to fourteen days, and 16.3 per cent in from fifteen to forty-six days; 22.8 per cent died.

In the present series of 705 cases of erysipelas, the length of the patients' stay in the hospital was reduced by 59.6 per cent.

TABLE 2.—*Body Erysipelas*

142 cases of body erysipelas treated with antitoxin at Bellevue Hospital between May 5, 1927, and May 4, 1928			92 cases of body erysipelas treated without antitoxin at Bellevue Hospital between May 5, 1926, and May 4, 1927		
78.1% cured in 3 to 7 days 9.8% cured in 8 to 14 days 3.5% uncontrollable 8.4% died			18.4% cured in 4 to 7 days 42.3% cured in 8 to 14 days 16.3% cured in 15 to 46 days 22.8% died		
Cured in	Number of Cases	Per Cent of Total	Cured in	Number of Cases	Per Cent of Total
3 days	25	17.6	4 days	3	3.2
4	19	13.3	5	4	4.3
5	31	21.8	6	5	5.4
6	22	15.4	7	5	5.4
7	14	9.8	8	9	9.7
8	5	3.5	9	3	3.2
9	2	1.4	10	8	8.6
10	2	1.4	11	2	2.1
11	1	0.7	12	7	7.6
12	1	0.7	13	4	4.3
13	2	1.4	14	6	6.5
14	1	0.7	15	1	1.0
Uncontrolled	5	3.5	16	1	1.0
Died	12	8.4	17	3	3.2
			18	2	2.1
			19	1	1.0
			23	1	1.0
			24	1	1.0
			26	1	1.0
			27	1	1.0
			29	1	1.0
			30	1	1.0
			46	1	1.0
			Died	21	22.8

Percentage of deaths from all causes in patients treated with antitoxin	5.6
Percentage of deaths from all causes in patients not treated with antitoxin	11.0
Average number of days in hospital of all patients treated with antitoxin	4.6 days
Average number of days in hospital of all patients not treated with antitoxin	11.4 days

In 15,277 cases of erysipelas treated at Bellevue Hospital without antitoxin in a period of twenty-three years, the mortality from all causes was 10.1 per cent. In the present series of 705 cases treated with antitoxin, the mortality was 5.6 per cent, an apparent reduction of 44.5 per cent, although, of course, it is hazardous to draw conclusions from such disproportionate numbers. On the other hand, erysipelas is almost never a primary factor in death, since it seldom becomes septicemic and its local depredations only rarely are such as directly to cause death. It follows, therefore, that this figure refers to the efficacy of the antitoxin treatment of erysipelas as a check to the progress of a disease which practically always constitutes a contributing rather than a direct factor in the production of death.

As far as the complications of erysipelas are concerned, the antitoxin treatment does not offer any promise of prevention. In the present series, abscesses occurred after the use of antitoxin with the same frequency as in ordinary circumstances. Similarly, the antitoxin treatment erects no obstacle to the occurrence of sequelae, among which universal alopecia, persistent edema of the cartilaginous ear, exhaustion psychoses, and the like are to be encountered in the same familiar measure as before. Finally, in a noteworthy percentage of all patients serum sickness occurs, coming on in from two to seven days after the cessation of the injections. It differs in no wise from the serum sickness seen after the use of other serums and lasts two or three days, the urticarial rash with its attendant itching and the painful joints serving as an annoyance rather than as an element of danger. Incidentally, in employing the antitoxin in the treatment of erysipelas, we have observed that, after the amelioration or disappearance of the local lesion, the patients sometimes develop certain disquieting deviations of temperature and that a few days later, when the rash of serum sickness appears, these temperature disturbances subside completely. In one such case we were concerned for more than a week by the fear that the patient was developing typhoid or miliary tuberculosis, only to be relieved at the end of that time when an urticarial rash appeared and the temperature returned suddenly to normal.

CONCLUSIONS

1. The antitoxin treatment of erysipelas marks an advance, the results of which are commensurate with those obtained in the treatment of diphtheria. It cannot be too strongly emphasized, however, that, beyond the immediate attack, the antitoxin treatment promises nothing whatever: (*a*) It does not confer immunity, recurrent attacks occurring with the same freedom as in erysipelas treated by other methods; (*b*) it does not diminish the incidence of complications, such as the abscesses which so frequently follow in the wake of this disease; (*c*) it does not prevent the occurrence of sequelae, such, for example, as total alopecia, exhaustion psychoses, and the like. The value of the antitoxin treatment of erysipelas, I repeat, lies solely in its ability to control the immediate attack. This it does in the great majority of all patients, but it is likewise to be emphasized that any one treating a large number of patients with erysipelas may, in a small but none the less impressive percentage of cases, expect to encounter disappointment in a variety of the disease which is intractable, no matter how much antitoxin is administered.

2. Facial erysipelas responds more readily to treatment by antitoxin than erysipelas of the trunk or extremities. In a series of 563 facial cases treated at Bellevue Hospital, 92.1 per cent of the patients were cured in from two to seven days and 1.9 per cent in from eight to fourteen days, while in five patients, or 0.8 per cent, the disease was uncontrollable even when full doses of antitoxin were administered over a period of many days. Of the 563 patients, twenty-eight, or 4.9 per cent, died. In a series of 489 patients with facial erysipelas treated without antitoxin during the previous year, 26.7 per cent were cured in from three to seven days and 49.2 per cent in from eight to fourteen days, while 15.1 per cent required from fifteen to fifty-three days, and death occurred in 8.7 per cent.

In a series of 142 patients with corporal erysipelas treated by antitoxin, 78.1 per cent were cured in from three to seven days, 9.8 per cent in from eight to fourteen days, and in 3.5 per cent the disease was totally uncontrollable; death occurred in 8.4 per cent. In a series of ninety-two patients with body erpsipelas treated without antitoxin during the previous year, 18.4 per cent recovered in from four to seven days, 42.3 per

cent in from eight to fourteen days, 16.3 per cent in from fifteen to forty-six days, and 22.8 per cent died.

3. The intramuscular route offers the best method of introducing the antitoxin. Intravenous injection, I think, is dangerous and is to be employed only in desperate circumstances. The antitoxin should be administered in full therapeutic doses, irrespective of the age of the patient, and repeated at intervals of twenty-four hours until the local lesion ceases to spread and the edema begins to dissipate.

4. The antitoxin treatment of erysipelas confers great economic benefit on both patient and hospital, the patient's period of disability being reduced by almost 60 per cent. At the same time it effects a notable saving of bed linen and sleeping garments, doing away with the destructive action of ointments and similar local applications formerly used in the treatment of this disease.

First Avenue and Twenty-Ninth Street.

DISTURBANCES IN SODIUM CHLORIDE METABOLISM *

HAROLD M. TRUSLER, M.D.
INDIANAPOLIS

Recent investigations have brought to light many interesting facts concerning the morbid processes that may result from disturbances in sodium chloride metabolism. In the past it was recognized in a vague fashion that sodium chloride must have something to do with the osmotic pressure relationship in the blood and tissues. Further than that there has been very little appreciation of the extreme importance of this inorganic salt in the animal body.

GENERAL CONSIDERATIONS

The blood normally contains about 500 mg. of sodium chloride per hundred cubic centimeters and all the tissues contain varying quantities, so that the adult of average size will carry in his body approximately 300 Gm. of salt as a necessary requirement for life.

Furthermore, the gastro-intestinal tract is normally a reservoir of surplus sodium chloride. In addition to the fact that there are appreciable quantities of salt in many of the foods that are taken, man and most animals have an appetite that prompts the intake of sodium chloride as such. I have no doubt that this appetite has for its basis some relationship to a physiologic demand which the tissues exert for sodium chloride.

The salt that is taken into the gastro-intestinal tract remains for the most part unabsorbed as the liquid contents pass through the stomach and small bowel. On reaching the colon this salt, together with the water, is taken into the blood. As excesses are absorbed the kidney is constantly excreting sodium chloride, so that the chloride level in the blood and tissues remains fairly constant. Furthermore, if the chloride intake ceases, the kidney ceases to excrete chlorides. By this mechanism the body maintains an equilibrium, retaining the 300 Gm. of salt dissolved in the blood and fluid elements of the tissues, dissociated into sodium ions and chloride ions. In the present discussion, the chloride ion is of chief concern.

In an individual in this state of equilibrium without chloride intake and without excretion of chlorides in the urine there exists an interesting cycle of chloride metabolism. The chloride ion is utilized in the formation of the hydrochloric acid that is secreted in the gastric juice, and it is evident that chloride ions secreted into the stomach are for the time removed from the blood. Furthermore, they remain a potential loss until reabsorption, chiefly through the lower bowel, restores them again to the blood.

In this fashion the animal body may exist at a minimum level of chloride equilibrium without any reserve. Under such conditions, however, it is obvious that any disorder which interrupts this mechanism can produce marked changes in the blood chlorides. It is apparent that the blood itself can contain at any one time only from 25 to 30 Gm. of the total chlorides in the body. If the blood is called on to continue its secretion of the chloride ion and reabsorption from the intestinal reservoir is interrupted, obviously marked reductions in the blood chlorides may occur. As this continues, the stores in the tissues will likewise be depleted. This mechanism is relatively slow. The sudden loss of chlorides, even in small amounts, may markedly reduce the chlorides in the blood.

DISORDERS OF THE GASTRO-INTESTINAL TRACT

The marked reduction in the chlorides of the blood which may result from disorders of the gastro-intestinal tract was first emphasized by MacCallum [1] in his work on pyloric obstruction. He found that the gastric tetany which occurs in pyloric obstruction is a symptom of chemical changes in the blood; namely, a state of alkalosis and a low blood chloride concentration. The far reaching importance of these observations was not appreciated for a number of years. After the work of Haden and Orr [2] on the chemical changes of the blood in dogs following acute obstruction of the intestine, interest in the chlorides of the blood was again stimulated. Their conclusions, however, did not explain the clinical manifestations of intestinal obstruction in most human patients, and for this reason there has been much confusion. As a result, a long series of investigations [3] was undertaken, intestinal obstruction being experimentally produced in dogs and the changes in the blood being studied. The results do much to clarify the confusion concerning causes of death from this condition and to give a rational conception of disorders in chloride metabolism.

When obstruction of the bowel occurs above the cecum, at once the normal absorption of water and sodium chloride from the colon is interrupted. In obstruction below the cecum, obviously the change is less marked and, conversely, the higher the obstruction, the more pronounced the disturbance becomes. The result is a progressive dehydration, and since the stomach continues to secrete hydrochloric acid there is also a progressive lowering of the blood chlorides. If vomiting is persistent, this state of dehydration and hypochloremia may continue rapidly to a fatal level. Furthermore, in a simple obstruction of the bowel, uncomplicated by gangrene or injury to the intestinal wall from overdistention, this metabolic disorder is the one and only cause of death. It has been shown experimentally that a dog with simple obstruction of the small

* From the Department of Surgical Pathology, Indiana University School of Medicine, the Eli Lilly Research Fellowship.

1. MacCallum, W. G., and others: Effect of Pyloric Obstruction in Relation to Gastric Tetany, Bull. Johns Hopkins Hosp. **31**: 1 (Jan.) 1920.
2. Haden, R. L., and Orr, T. G.: Chemical Changes in Blood of Dog After Intestinal Obstruction, J. Exper. Med. **37**: 365 (March) 1923.
3. Gatch, W. D.; Trusler, H. M., and Ayres, K. D.: Acute Intestinal Obstruction: Mechanism and Significance of Hypochloremia and Other Blood Chemical Changes, Am. J. M. Sc. **173**: 649 (May) 1927; Causes of Death in Acute Intestinal Obstruction; Clinical Applications and General Principles of Treatment, Surg. Gynec. Obst. **46**: 332 (March) 1928.

intestine may be kept alive for from twenty to thirty days (period of starvation) by the hypodermic administration of water and sodium chloride (physiologic solution of sodium chloride in large quantities).

If, however, the obstructed bowel becomes injured by overdistention, toxic absorption occurs and the administration of salt solution will not prevent death from this toxemia. It does, however, serve to support the circulation and to render the patient a better surgical risk.

From this discussion it becomes evident that salt solution administered intravenously or hypodermically is a most valuable adjunct to the treatment of intestinal obstruction or any other gastro-intestinal crisis that interrupts the absorption of water and salt from the bowel. By the preoperative administration of physiologic solution of sodium chloride in large quantities, a patient otherwise moribund may be enabled to withstand major surgical procedures. Postoperatively, the same measures offer the best means of preserving life until the injury can be repaired and normal metabolic processes restored.

It should be borne in mind that dangerous disturbances in water and sodium chloride metabolism may occur during the persistent vomiting of infants, whether from pyloric stenosis or from gastro-enteritis. In the pernicious vomiting of pregnancy, in peritonitis, in high intestinal fistulas, or in any condition that interrupts the normal absorption of water and salt from the bowel, the hypodermic or intravenous administration of from 1,000 to 3,000 cc. of physiologic solution of sodium chloride daily is a most valuable therapeutic measure.

SYMPTOMS OF HYPOCHLOREMIA

A severe degree of hypochloremia, in which the blood chloride level has fallen rapidly, will usually present the characteristic syndrome of gastric tetany. In this condition there is first a spasticity of the muscles, more pronounced in the hands and feet, giving rise to a carpopedal spasm, which may be overlooked unless the patient is closely questioned or is given sufficient stimulation to elicit the symptom. As the condition progresses clonic spasms develop, so that true gastric tetany may be confused with the so-called toxic convulsions.

In order to bring about this tetany, the sodium chloride in the blood must fall to a very low level (200 mg. per hundred cubic centimeters). Between this low level and the normal 500 mg. of sodium chloride per hundred cubic centimeters of blood there are varying degrees of hypochloremia which may not give any characteristic symptom. There will be dehydration and circulatory stasis, so that the patient is in a prostrated, slightly stuporous, state with low blood pressure and weak, rapid heart action.

In other words, it seems that many of the "shock states" which develop in patients of this type are conditions of hypochloremia. That dehydration is a factor is not denied. It must be borne in mind that under these conditions water and salt metabolism are inseparable. A disorder causing hypochloremia will always lead to dehydration, and there is no mechanism whereby the water may be effectively replaced without replacing also the chlorides. It has been fortunate for the lives of many patients that the parenteral administration of physiologic solution of sodium chloride has for some time been recognized as a valuable therapeutic procedure even though empirically. In the light of present knowledge, the use of this agent should be even more effective.

OTHER CONDITIONS THAT LEAD TO CHLORIDE DISTURBANCES

Among other conditions in which chloride disturbances have been observed are acute lobar pneumonia, severe burns, mercuric chloride poisoning, and anasarca. In all these conditions the mechanism responsible for the hypochloremia is in question. Clinically, there has been a tendency to explain the phenomenon as a "toxic" effect rather than as a mere physical loss of chlorides from the blood. In my experimental work, however, I have always found that a significant reduction of blood chlorides is invariably accompanied by a commensurate loss of chloride ions from the animal body.

That a marked reduction of blood chlorides may occur in patients suffering from mercury poisoning was first brought to our attention by the reports of Heim.[4] As a result of clinical observations, he concluded that hypochloremia could not be explained by a loss of chlorides from the gastro-intestinal tract either by vomiting or by diarrhea. However, as a result of our observations [5] on the chemical changes in the blood of animals after the intravenous injection of mercuric chloride, we drew the following conclusions:

1. Dogs poisoned by intravenous injections of mercuric chloride suffer a marked reduction in the sodium chloride of the blood as a result of loss of chlorides through vomiting.
2. This hypochloremia, though associated with a relative acidosis, produces gastric tetany. The tetany, therefore, is not a symptom of alkalosis but occurs in any condition of hypochloremia without direct relationship to the carbon dioxide combined in the plasma.
3. Restoration of the blood chloride level relieves and prevents tetany but does not otherwise modify the course of mercury poisoning. There is some evidence that 2 per cent salt solution administered intravenously may be of value by forcing excretion from the kidney.
4. In the human patient poisoned with mercury, the danger of a low level of blood chlorides should be borne in mind.

Other clinical applications were discussed at some length in the original report.

The relationship of the chlorides to anasarca has always been a subject for interesting speculation. Concerning this relationship, surprisingly few facts are known. It has been observed, however, that in nephritis with severe edema the blood chlorides are usually low. Conversely, in nephritis without edema but with nitrogen retention, the blood chlorides may be abnormally high. These facts would lead to the conclusion that chloride retention is not a factor in the production of edema, and that when fluids transude into the tissues, the chloride ion is carried out of the blood as an innocent party in the transaction. Blum [6] has advanced the theory that edematous accumulation is favored by retention of the sodium ion. If this is true, the patient with edema should be benefited by restriction of the sodium intake, the chloride ion being administered in the form of ammonium chloride. It is furthermore understandable that an extensive burn or any condition leading to the exudation or the escape of serous fluids may by this mechanical process bring about a significant reduction in the blood chlorides.

CONCLUSIONS

1. Under normal conditions, the sodium chloride in the blood and tissues is maintained at a physiologic level

4. Heim, F.: Hypochloremia in Poisoning with Mercuric Chloride, Schweiz. med. Wchnschr. **55**: 1085 (Nov. 26) 1925.
5. Trusler, H. M.; Fisher, W. S., and Richardson, C. L.: Chemical Changes in the Blood in Mercuric Chloride Poisoning: Mechanism and Significance of Hypochloremia, Arch. Int. Med. **41**: 234 (Feb.) 1928.
6. Blum and Van Caulaert: Mechanism of "Dry" Chloride Retention, Bull. et mém. Soc. méd. d. hôp. de Paris **49**: 1175 (July 24) 1925.

by absorption through the intestine and elimination of excesses through the kidney. The kidney maintains a blood chloride threshold below which chlorides are not excreted in the urine. In this fashion the animal body may exist at a minimum level of chloride equilibrium.

2. Secretion of hydrochloric acid into the stomach is a constant mechanism tending to remove chloride ions from the blood. Any disorder which interrupts the reabsorption of chloride ions in the lower bowel may therefore produce a dangerous reduction of the blood chlorides.

3. For this reason, hypochloremia is one of the important lethal factors in intestinal obstruction and in other severe disorders of the gastro-intestinal tract. A marked reduction of the blood chlorides produces the characteristic syndrome of gastric tetany. Lesser degrees of hypochloremia cannot be differentiated from the states of shock and dehydration so commonly seen in patients of this type.

4. With this knowledge at hand, there is a rational basis for the free use of physiologic solution of sodium chloride intravenously or hypodermically as a supportive and life-saving measure.

5. Other conditions than those here summarized lead also to disturbances in the water and salt metabolism.

408 Hume Mansur Building.

ETIOLOGY AND TREATMENT OF CHRONIC ARTHRITIS *

WILLARD C. STONER, M.D.
CLEVELAND

No disease, the cause of which is unknown, can be treated entirely rationally and satisfactorily. The various manifestations of chronic arthritis represent chronic disease, the etiology of which is often baffling and obscure and the treatment of which, even in some of our best regulated clinics, is unsatisfactory and often one of varying degrees of failure. The world wide existence of the disease, the relatively high morbidity incidence, the progressive chronicity and the tendency to invalidism make the economic aspect an extremely important one.

Etiology aside from that of infection is largely speculative, and infection as represented by the various foci often associates unsatisfactorily with the disease process in an individual case, that is, the removal of recognizable foci of infection often leaves the disease process unaltered. The removal of infectious foci may or may not alter the disease, and our reasoning must be that the disease process no longer requires the feeding of an active focus or the removed focus of infection was not a direct etiologic factor. The frequency with which a definite focus of infection is associated with the disease process which on removal results in amelioration of the disease proves beyond doubt that certain cases of chronic arthritis are infectious in origin. This warrants us in saying, in certain cases at least, that chronic rheumatism is the gage of the immunity of the patient to a chronic infection. It must be accepted that there is a constitutional predisposition to the disease as is true in certain other chronic diseases, and is it not rational to believe that some other underlying factor is present which accounts for the development of the disease in certain patients and not in others who are subjected to the same infection? In a speculative sense, may we not think of a detoxifying action of the liver against the effects of toxins, which in certain cases fails to protect the organism? Here, however, we cannot go beyond speculation for the reason that liver function tests give us no tangible help, and recognizable gall tract and liver infections are not commonly associated with chronic arthritis.

Referring to the various foci of infection can have no helpful purpose in this discussion for the reason that the search for foci in the recesses of the body has become an established routine in every clinic. Gastro-intestinal infection is being emphasized more and more, and certain observers have found on bacteriologic study of the stool a high percentage of streptococcus infection. Such results have not been generally confirmed. It has been pointed out by Faber and others that there is commonly an associated achylia gastrica which represents a failure of the normal protective forces by the stomach against the invasion of bacteria. A simple achylia gastrica is relatively common in my experience but unassociated with chronic rheumatic manifestations. On the other hand, a study of gastric secretions in a relatively large series of patients with chronic arthritis has shown achylia gastrica to be relatively uncommon, and sigmoidoscopic examination has shown colitis likewise to be relatively uncommon. In clinics where large numbers of patients affected with disease of the colon and intestines are treated, arthritis does not occur commonly. Hidden tuberculous foci have long been emphasized as a cause, and, in spite of our very modern conception of the spread of tuberculosis through the blood stream rather than by the lymph channels even in the lungs, observation does not indicate that tuberculosis is responsible for the disease. We must look on joint changes and muscular rheumatic manifestations as local manifestations of a rheumatic state operating throughout the body. It is lowered resistance of these structures to these bodily influences that results in the disease process, it matters not how or where these abnormal influences arise.

Suboxidation, a condition in which the local tissues involved are unable to obtain necessary oxygen, has been advanced as a theory of lowered tissue resistance by Llewellyn, Pemberton and others. Metabolic disturbances have been associated etiologically. It must be accepted that there is a so-called metabolic form occurring at that period in life when bodily functions begin to wane but food is taken in the same quantities. So-called rheumatic gout is metabolic in origin. The metabolic form occurs more commonly after 45 years and generally does not represent impairment of general health, as is often true of the toxic form. Endocrine disturbances have been regarded as etiologic factors, but investigation indicates that, when there is a coexisting endocrine disturbance, infection is in the background as possibly being responsible for both. The more common involvement of spines and hips in men, and of knees and phalangeal joints in women, indicates that trauma is a factor in localization. It seems certain that there are two distinct forms of chronic arthritis, the one proliferative and largely infectious, and the other degenerative and largely noninfectious. We may compare the noninfectious form with other chronic degenerative diseases such as arteriosclerosis, myocarditis and nephritis, and as is true in these the toxic factor is to be considered but is not the whole cause.

Indefinite etiologic diagnosis of disease always lends indefinite and very often empiric management, and this

* Read before the Section on Practice of Medicine at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 14, 1928.

is true of many of the cases of chronic arthritis. In discussing this subject in one of the large clinics in Europe within the last year, I found, to my surprise, that there was little or no interest manifested in the subject and treatment of the disease was abruptly dismissed. The unfortunate victim suffering from chronic arthritis often becomes the victim of fads, quackery and irrational therapy. The results obtained with vigorous treatment over a period of time are sufficiently encouraging to warrant the effort in every case of chronic arthritis. Pemberton emphasizes the importance of intensive treatment, and the favorable results which he obtains justify the effort. He states that the proper treatment of chronic arthritis constitutes one of the most involved chapters in modern therapy. It is almost a specialty in itself. It requires a long experience with the intricacies of the syndrome and a personal knowledge of many measures which cannot be satisfactorily taught in the medical school, obtained during the hospital internship or acquired in the general practice of medicine. The principles of treatment should be the removal of an infective cause, if recognizable, and stimulation of bodily immunity by every available means. Every gross focus of infection should be removed. Physical therapeutic measures should be resorted to as a routine, including hydrotherapy, local application of heat, baking, massage (where not contraindicated), colonic irrigations, ultraviolet ray and diathermy. Low carbohydrate intake, particularly in the obese, is advisable, and if the metabolic rate is low iodine and thyroid therapy judiciously administered are of value. The results from protein shock therapy do not generally justify its use and therefore as a routine it is not advisable. The same may be said of vaccine therapy in any form. Drug therapy should include salicylates, cinchophen, iodides, alkalis and amiodoxyl benzoate.

During the last five years I have managed 140 cases of chronic arthritis. There were forty-eight males and ninety-two females. The oldest patient was 73 and the youngest 8 years of age. The average age of females was 47 and of males 46. Seventy-three cases were associated with other disease and sixty-seven were unassociated. Obesity was present in eighteen; chronic respiratory tract infection, such as chronic bronchitis and pleuritis, was present in five; definite cardiovascular changes were present in sixteen; of endocrine disturbances, hyperthyroidism was present in two and hypothyroidism in one. Gastrointestinal disturbances were as follows: three cases showed gastric anacidity and six cases showed colitis in some form on sigmoidoscopic examination. Five cases showed urinary tract infection. Diabetes was present in three cases, and pelvic infection was present in three cases. Other chronic rheumatic manifestations, such as sciatica and synovitis, were present in five cases. Two cases were syphilitic, and tuberculosis was present in one case. Skin manifestations, such as boils, erythema and eczema, were present in three cases. Nine cases were definitely associated with disturbed psychoneurotic states. Foci of infection, such as teeth and tonsils, were present in six cases and infected sinuses were present in seven cases. A large percentage of these cases had been searched for foci of infection and many represented misdirected treatment without results. In this series of 140 cases, onset was abrupt in twenty-two, insidious in eighty-five and indefinite in thirty-three. The duration of the illness was from thirty-five years to a few months, the average period being three years and nine months. None of the coexisting infectious processes seemed to bear any definite relation to the chronic rheumatic manifestations.

The treatment instituted was as mentioned. Effort was made to improve the general condition of health and regulate life in an effort to adjust the activity of the patient to the demands of the disease. A relatively low carbohydrate diet and big liquid intake was advised in most cases. Rest, avoidance of exposure and encouragement of elimination was a routine. Many of the patients with the more distressing symptoms were given iodides and salicylates intravenously daily or every other day. Cinchophen was given intensively at intervals. Amiodoxyl benzoate was given at weekly or twice weekly intervals in thirteen cases. The reactions were often marked by lacrimation, difficult breathing and a feeling of suffocation. The results obtained did not encourage us to continue treatment. Ultraviolet ray and diathermy were used as an adjunct in a large percentage of the cases, with rather indifferent results in many. Diathermy seems to be contraindicated in the active joint involvement. Colonic irrigations were resorted to more or less as a routine. In this series of 140 cases the shortest period of treatment was six days and the longest period was nine years. All treatment over a period was given at intervals only for a period of weeks, then omitted for a short period; however, cinchophen was administered continuously in many cases, 15 grains (1 Gm.) being given four times daily. The results of treatment in this series of cases of chronic arthritis showed marked improvement in nineteen, or 14 per cent; definite improvement in eighty-six, or 61 per cent. Eleven, or 8 per cent, were unimproved and fourteen, or 10 per cent, were questionable, at times improved and then relapsed. Ten, or 7 per cent, were not treated.

SUMMARY

The relatively high morbidity incidence of chronic arthritis, the progressive chronic course and the incapacitating nature of the disease make the economic aspect a very important one. Our present conception of the etiology indicates that there are two distinct types, the one infectious, the so-called hypertrophic form, and the other, the metabolic type, the so-called atrophic form. These forms are not always definitely distinct and one may fuse into the other. Etiologic treatment is largely limited to the infectious or toxic nature of the disease. Dietary measures have limited value. The results of careful management of these cases as described warrants the application of the measures mentioned as a routine. The treatment of these cases should not be left in the hands of the quacks and faddists. Institutional medicine should make an effort to standardize treatment which should be made intensive over a period of time, and continuous effort should be made to determine more definitely the cause.

8314 Euclid Avenue.

ABSTRACT OF DISCUSSION

DR. DAVID RIESMAN, Philadelphia: From a clinical point of view we must try to differentiate a number of varieties of chronic arthritis that are usually thrown together into one large neglected heap. Chronic gonorrheal arthritis may produce the greatest possible incapacity through multiarticular ankylosis. This terrible type is seen especially in young men. When these patients are observed in late stages the diagnosis of the true nature of the disease must be based on the history rather than on positive bacteriologic observations. Another form that merits attention is the dry arthritis of the knees seen especially in women about the time of the menopause. (Climacteric arthritis

is not a bad name for it.) What has interested me particularly in this form is the frequent disproportion between signs and symptoms. With little grating there may be much disability, and with extreme crepitation the patient may scarcely complain. I have noticed something analogous in connection with pericarditis: At times with a diffuse friction both audible and palpable the patient will have little precordial distress, while at other times a small pericarditic patch produces agonizing pain. Another interesting form of arthritis is that involving the vertebrae—spondylitis. Early recognition may be of great service. The smaller exostoses or spicules of the vertebrae which so many radiologists make much of do not seem to me to be of great moment. Arthritis of the shoulder joint is important on account of the need for differential diagnosis. In cases of shoulder pain besides arthritis, one must bear in mind cervical rib, brachial neuritis and bursitis. In the hip the diagnosis of mono-articular disease is not always easy; fracture and dislocation, as well as arthritis, have to be considered. With respect to treatment, my experience is very much like that of Dr. Stoner. The treatment of arthritis has not brought much credit to the profession nor can much be expected until we know more about the causes of arthritis. There are, however, a few points that I should like to emphasize: (1) The removal of foci of infection is always indicated, provided they can be removed without injury to the patient, and provided the removal is not undertaken during an acute exacerbation. (2) One must guard against contracture of the lower limbs by the use of extension. This is important, as otherwise when the disease is arrested the patient may be so crippled that he cannot walk. (3) In arthritis of the legs it is important to look for flat feet. (4) The agglutination reaction for *Streptococcus cardioarthritidis* should be tested. (5) In every case of chronic arthritis the thought of gout should be borne in mind. (6) The diet in chronic arthritis usually needs no restriction. Indeed, it should be liberal and should contain all the necessary vitamins. (7) Heat and massage properly used are helpful measures, and if persisted in often bring about results in unpromising cases. (8) Certain health resorts in this country and abroad have in my experience proved very useful in the treatment of chronic arthritis. In this country I have found Mount Clemens, Mich., Sharon Springs, N. Y., and Hot Springs, Va., the best.

DR. J. B. YOUMANS, Nashville, Tenn.: I have been particularly interested in the classification of arthritis used by Dr. Stoner since it bears on our ideas of etiology. It is a commonly accepted classification but I doubt whether we are justified in assuming that the so-called degenerative type is, on the whole, noninfectious. The conception of noninfectious, degenerative arthritis is based mainly on the work of Nichols and Richardson, who divided joint changes in arthritis into two main groups, proliferative and degenerative. In addition, the degenerative form is said to occur principally late in life associated with other degenerative and metabolic changes and unrelated to infection and focal infection. Nicholas and Richardson made it clear, however, that these two groups of pathologic changes were not due to two separate and distinct causes. In their paper occurs the following sentence, partly in italics: "These two pathological types, however, do not correspond to two definite etiologic factors; that is, to say two definite and distinct diseases; this point we wish to emphasize." And again, in their conclusions, "These two types do not correspond to two definite diseases, but each type represents reaction of the joint tissues to a considerable variety of causes." In this connection it is important to note that in their study Nichols and Richardson included as examples of the degenerative form such conditions as gout and Charcot joints, which have no place in the present discussion. Most of their cases of the degenerative type should be thus excluded. Finally, despite statements to the contrary, evidence of infection is quite often found in degenerative types and typical degenerative changes occur in cases undoubtedly infectious. The influence of such factors as age and arteriosclerosis in determining the type of tissue reaction to infection has been neglected. Degenerative joint changes are common in association with these factors; almost physiologic in the aged. Most often such persons do not have clinical arthritis. When they do it seems logical to assume that an additional factor, infection, is present, or that age and arteriosclerosis have resulted in a degenerative type of response to an infection. I do not deny that noninfectious degenerative arthritis can occur (aside from gout, etc.), but I believe that an uncritical acceptance of this classification leads, first, to a mistaken idea that all cases showing degenerative changes are noninfectious and, second, to errors in diagnosis in individual cases merely because of the presence of these degenerative changes.

DR. RUSSELL L. CECIL, New York: For some time I have been much interested in the classification of arthritis. During the past year we have been studying the bacteriology of chronic infectious arthritis, the type with swollen joints and more or less deformity as the disease advances. This is the type of arthritis that we usually associate with foci of infection in the teeth or tonsils. We have been very much surprised to find that by using a special technic we can get an atypical green streptococcus out of the blood stream in a high percentage of cases. We have studied forty-five cases of infectious arthritis and of these nearly 80 per cent yielded streptococci in blood cultures. Whether we shall be able to maintain such a high average I am not able to say at present. The point I wish to bring out is that in taking these blood cultures in the degenerative type of arthritis, we have been unable to get any positive results. It is only in the so-called chronic infectious type, or the deforming type, that we have been able to get *Streptococcus viridans* out of the blood stream. Strange as it may seem, these bacteria are actually in the blood; they are not contaminations. But they are present only intermittently. They are not there all the time. If one takes several blood cultures from the same patients at intervals of several weeks, one will get one or two positive cultures and one negative culture showing that the streptococci are poured out into the blood stream at intervals, and are probably accountable for the flare-ups to which these patients are so proverbially liable. We hope to report this work in full very shortly. I think that it throws important light on the question of whether all arthritis is identical; that is, whether it is all infectious or whether we may not have a type in middle aged persons, the so-called degenerative type, which is not of infectious origin.

DR. WILLARD C. STONER, Cleveland: One gets into a tremendous field when one considers etiology, and the longer I deal with the subject the more I feel that the same is true when one attempts to draw definite lines of demarcation from the standpoint of classification of types. I do not see how we can more satisfactorily and definitely classify these conditions until we know more about the disease than we do today. On the editorial page of a newspaper a few days ago there appeared a discusion on chronic arthritis by a very popular medical writer, in which he emphasized (and, of course, this is read by laymen) the importance of activity to prevent fixation and ankylosis of these joints, and the importance of vaccine therapy. "It matters not," he said, "what tpye of vaccine you use." It seems to me this is injudicious information to hand out to laymen on this problem.

Biochemistry in Medicine.—The aims and methods of the several branches which are included under the collective name of pathology differ considerably; and this is specially true of bacteriology and chemical pathology, although in the field of immunity they overlap and must collaborate. The bacteriologist studies the actual agents of disease, the stone which, as it falls into the pool, ruffles its surface, whereas the biochemist studies the ripples which spread outward in increasing circles, from the point of impact of the stone—in other words, the disturbances of the metabolic processes which result from the bacterial invasion. Of recent years, under the spell of the advances of bacteriology and protozoology, we have tended to lay all the stress upon the invading malady and to pay too little attention to the reaction of the organism invaded, but there are signs that the pendulum is returning from the limit of its swing, and in its modern dress the revived doctrine of diathesis will rest largely upon a chemical basis. The new biochemistry does not restrict itself any longer to the older problems of chemical constitution and the products and methods of metabolism. The physicochemical aspects of the subject are receiving more and more attention. We may hope that, important as those aspects are, they will not so engross attention that the older problems will be neglected.—Garrod, Archibald: Place of Biochemistry in Medicine, *Brit. M. J.*, June 30, 1928.

TREATMENT OF NEUROSYPHILIS BY MALARIA

SEROLOGIC RESULTS AND A COMPARISON WITH TREATMENT BY TYPHOID VACCINE *

PAUL A. O'LEARY, M.D.
ROCHESTER, MINN.

In previous reports, I [1] have called attention to the status of a group of 100 cases of neurosyphilis in which the treatment by malaria had been given between June, 1924, and February, 1926. In fifty-seven of these cases paresis was present, and in forty-three there were other manifestations of resistant neurosyphilis. It is my purpose in this report to emphasize the results of treatment by malaria in 138 cases of the nonparetic type, with particular reference to the serologic studies, and to compare briefly this method with that of treatment by typhoid vaccine. The status of the cases of asymptomatic neurosyphilis in which treatment by malaria was given will also be emphasized.

In the group of "asymptomatic neurosyphilis" are included the cases in which the spinal fluid remained positive following the intensive use of arsphenamine, mercury, bismuth, the iodides and intraspinal medication, and in which clinical signs and symptoms were not sufficient to classify the type of neurosyphilis. This group is not to be confused with so-called paresis sine paresi or asymptomatic paralysis of neurosyphilis in which the serologic and clinical signs of impending paresis are found.

Of the original 100 cases, six presented the asymptomatic type of neurosyphilis. In five of these the blood Wassermann reaction and all reactions of the spinal fluid became negative. In the sixth case the Wassermann reaction of the spinal fluid remained weakly positive, and the cell count, globulin and colloidal benzoin tests were negative.

Since January, 1926, treatment by malaria has been used in fifty-one additional cases of asymptomatic neurosyphilis. In all of these intensive treatment with different types of arsphenamine, various preparations of mercury, bismuth, iodides and intraspinal medication had been given previously, and because serologic response had been unsatisfactory the patients were inoculated with *Plasmodium vivax*. In this group of cases the blood Wassermann reaction and all reactions of the spinal fluid reversed to negative in 24 per cent. In an additional 11 per cent either the Wassermann reaction was weakly positive or the globulin reaction was positive, the cell count normal, and the colloidal benzoin curve without characteristics suggestive of paresis. If the patients who were treated four years ago may be referred to as a criterion, it would seem that further observation will show that more than 35 per cent of the patients who had failed to show satisfactory response to what were formerly called routine measures will, following a course of fever therapy, manifest reversal to negative of the reactions on the serum and spinal fluid.

In most of the cases in this group the clinical symptoms and signs did not warrant a definite classification of the type of neurosyphilis, although in 40 per cent the patients reported definite clinical improvement in one form or another. In view of these data, it is now my practice to give a course of treatment by malaria in cases of neurosyphilis of the asymptomatic or unclassified type in which there is unsatisfactory response to two courses of intensive combined therapy.

Of the thirteen cases of paresis sine paresi or asymptomatic paralysis in which treatment was given four years ago, the serologic reports are negative and clinical symptoms are now absent in eight. In the last two years the treatment has been given in fifty-eight additional cases, and although it is too soon to make conclusive deductions, a definite degree of clinical and serologic improvement has occurred in more than half.

Of the fifty-eight cases classified as tabes dorsalis of the persistent type, progressive frank tabes dorsalis was present in eight, persistent "lightning pains" with negative serum reactions were present in four; optic atrophy was present in twenty-two, and gastric crises were present in twenty-four. The treatment by malaria was given in this group for the symptomatic effects, the status of the serology being of secondary importance. All these patients had previously received antisyphilitic remedies with slight, if any, improvement.

As previously reported, the results in the frank cases of tabes dorsalis have not been encouraging, only two of the eight patients deriving benefit. Similarly, in the cases of optic atrophy complicating tabes dorsalis, there was no evidence to show that treatment by malaria checked the progressive loss of vision, although the other manifestations of neurosyphilis and the patient's general condition were benefited.

In the twenty-four patients with gastric crises, four have not had an attack for more than a year and nine have improved materially; the attacks, which now usually occur in the morning, last only an hour or two. The interval between attacks has been greatly increased.

In the five cases of severe persistent leg pains with indisputable clinical signs of tabes dorsalis and negative spinal fluid and blood Wassermann reactions, two patients have been completely relieved; the remaining three did not derive benefit.

It would seem, therefore, that the greatest improvement occurs in the cases in which the least amount of parenchymatous degeneration has taken place. This has also been noted in the cases of paresis.

The fourth annual report of the first fifty-seven cases of paresis in which treatment by malaria was given between May, 1924, and February, 1926, showed that in 41 per cent complete remission continued and in an additional 24 per cent the improvement previously noted was maintained. The patients "in remission" were retaining their former occupations and supporting their families, and those who were "improved" were unable to maintain their former positions but worked for short periods at various occupations, usually of a more menial type and without responsibility. Included in the improved group were several patients who previous to the treatment by malaria had been confined to a sanatorium or hospital for the insane but are now paroled and because of their financial status are not obliged to work. Although the percentage of those in complete remission is lower for 1927 than it was in 1926, none of the patients have shown enough signs of progression to be classified in the group of relapsed cases.

The outstanding observations in the fourth year review of the cases of paresis have been the serologic changes. In the first two years following the treatment by malaria, hardly any change was noted in the

* From the Section on Dermatology and Syphilology, the Mayo Clinic.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 15, 1928.

1. O'Leary, P. A.: Treatment of Neurosyphilis by Malaria, J. A. M. A. 89: 95-99 (July 9) 1927; Treatment of Neurosyphilis by Malaria: Fourth Year's Results, J. California State M. A., to be published.

serologic study of the spinal fluid or the blood. At the end of the fourth year, however, nineteen of the twenty-three (82 per cent) patients with paresis who are still in remission have shown a complete reversal to negative of the reactions on the blood and spinal fluid.

To those particularly interested in the serologic study of the spinal fluid in paresis, the complete reversal in 82 per cent of cases to normal will appear unusual. Too much significance should not be attached to this observation. I have observed a patient who, while in complete remission, with negative blood and spinal fluid reactions, died unexpectedly in a paretic convulsion. I have also noted several patients who did not show significant clinical improvement following treatment by malaria but in whom the reactions on the blood and spinal fluid were reversed to negative. The serologic reversals appearing several years after the clinical improvement seem to be the most authentic and the result rather than the cause of the clinical remission. Although the interpretation of serologic changes is gratifying, the fact must be borne in mind that serologic reversals in cases of paresis warrant long observation, and until the opportunity for extensive microscopic study of the brains of patients treated by malaria permits a comparison of the pathologic and serologic data, conclusive deductions are not warranted.

NONSPECIFIC TYPHOID VACCINE

In my early experience with treatment by malaria a certain group of patients was observed in whom chills and fever did not develop following the inoculation of *Plasmodium vivax*. Many of these patients had had malaria previously and were immune, and in others the infection was controlled following a few pyrexial attacks. In certain of the latter it was possible to start the malarial chills and fever again by the use of foreign proteins. In a group of twenty-six cases of paresis in which malaria could not be produced, a series of from eight to twelve intravenous injections of typhoid vaccine was given. I have noted that resistance is developed to the use of vaccines of this type. On several occasions it was found necessary to give 350,000,000,000 typhoid bacilli at each intravenous injection to produce a temperature of more than 101 F. On the other hand, the debility and systemic complications have been fewer from the typhoid injections than from the malaria.

It is not possible at this time to draw a just comparison between the treatment by malaria and the treatment by typhoid vaccine, although in the latter the remissions have been slower in appearing, less marked and fewer (15 per cent less). It should be noted, however, that treatment by malaria is not possible in all communities, and that organized institutional care of a large number of patients is necessary for its successful application. Treatment by typhoid vaccine may readily be used in place of malaria if it is difficult to obtain *Plasmodium vivax*, if the patient has had repeated attacks of malaria, if the patient is debilitated, or if only an occasional patient is to be treated.

COMMENT

Of the 358 patients with neurosyphilis treated by malaria since June, 1924, in the section on Dermatology and Syphilology of the Mayo Clinic, 220 have shown early manifestations of paresis. The evidence accumulated from the observation of these patients warrants the deduction that, for a selected group manifesting early signs of paresis, fever therapy offers the most economical, rapid and efficient means of producing remissions. The use of malaria, however, requires institutional care and an organization with special facilities for such treatment. Treatment by typhoid vaccine, although slightly less efficient than treatment by malaria, does not require institutional care and is an ideal substitute for malaria when the facilities do not permit of the use of the latter.

In the nonparetic group of cases the outstanding observation has been the serologic changes. The most pronounced clinical results are noted about one year after the institution of treatment by malaria, and in the same group of cases serologic reversals develop from three to four years after the course of malaria. As a result of these data, I now recommend treatment by malaria in those cases of neurosyphilis that fail to show favorable clinical and serologic response early in the course of treatment. In my judgment it is unwise to postpone fever therapy until obvious clinical signs of paresis develop because repeated observations in both the paretic and the nonparetic cases have shown that the patients who manifest the most benefit are those with the least evidence of parenchymatous degeneration.

The advocates of the specific and the nonspecific treatment of syphilis are not engaged in controversy. The arsphenamines, bismuth, tryparsamide, malaria and typhoid vaccine each has a definite field in which it produces the maximal good. Years of experience in large series of cases have demonstrated beyond doubt the value of these various remedies. The task now awaiting the syphilologist is to develop criteria to enable him to determine with a fair degree of certainty the case in which the special remedies are best suited. I believe that either tryparsamide or arsphenamine, with intraspinal measures and bismuth or mercury, is definitely indicated following fever therapy, in spite of the fact that in a few cases in which specific therapy following the fever course was refused the clinical and serologic results were excellent.

ABSTRACT OF DISCUSSION

DR. C. W. STONE, Cleveland: Recent statistical reports indicate that paresis is one of those mental disorders whose incidence is increasing. Malarial therapy and kindred fever-producing methods have been found to be the most satisfactory procedure in treating cases of paresis. Dr. O'Leary's paper is a plea that we do not permit cases of paresis to develop, and that cases of resistant cerebrospinal syphilis be given the advantage of fever therapy before serious parenchymatous changes have had an opportunity to develop. It seems to me that the outstanding feature of his paper is the fact that in these fifty-one cases of cerebrospinal syphilis resistant to the ordinary antisyphilitic treatment, but given fever therapy since January, 1926, one fourth have shown a negative blood and spinal fluid; and, furthermore, that in a similar resistant group of cases of cerebrospinal syphilis treated in a similar manner over a four year period, there has been an incidence of about one third of negative observations in the blood and spinal fluid. Finally, in his cases of paresis, as outlined in his so-called fourth annual report, there has been among those cases which have shown good remissions this very large figure of 80 per cent plus of negative reactions in the blood and spinal fluid. In the past, of course, paresis has been the stumbling block so far as the therapy of syphilis was concerned. If these fever-producing methods are able to bring about such an improvement, then we have overcome the chief stumbling block in the treatment of syphilis. All over the world I think that there has been a more or less uniform opinion as to the clinical results obtained following the use of malaria in paresis. The development of negative spinal fluid and negative serologic reactions in the blood coming on as a late manifestation of the fever therapy is naturally a more recent observation and is the important thing to which Dr. O'Leary directs attention. Bunker

and Kirby of New York have had more or less similar results so far as paresis is concerned. One interesting feature about their work is the fact that among a series of 156 cases of paresis without other treatment than malaria about the same clinical improvement has occurred, and they are beginning to get much the same sort of change in the cerebrospinal fluid as that reported by Dr. O'Leary. In the Cleveland City Hospital we are just beginning to get these negative serologic reactions in the blood and in the spinal fluid. Clinically, the results are approximately the same as those reported by others. It seems to me that the hope in the whole scheme of fever therapy lies in the fact that perhaps we may be taking a step forward in establishing a still more satisfactory type of therapy on a less empiric basis.

DR. PAUL A. O'LEARY, Rochester, Minn.: I wish to thank Dr. Stone for reemphasizing the point that malarial therapy should be used in the patient with neurosyphilis who is not showing favorable progress to routine intravenous therapy. My experience has convinced me that it is unwise to wait until these patients show clinical signs of paresis before inoculating them with the plasmodia. The late Professor Kyrle of Vienna started to treat a series of patients presenting the acute signs of syphilis with malarial therapy in combination with one of the arsphenamines. Of course, it will be a decade before worth while deductions can be made as to the value of this form of treatment in acute syphilis. To my knowledge there has as yet not been any proved explanation of the mechanism by which malarial therapy produces the therapeutic results noted in the resistant forms of neurosyphilis.

COMMON DERMATOSES ENCOUNTERED AMONG TUBERCULOUS AND NONTUBERCULOUS EX-SERVICE PATIENTS *

F. J. EICHENLAUB, M.D.
WASHINGTON, D. C.

The relation of tuberculosis to certain specific diseases of the skin has been covered extensively in the literature. Except in a very few diseases, the profession is as completely divided today as it was thirty years ago. No attempt will be made to cover the immense literature on each of these diseases. Reference is made only to certain articles which show the state of confusion that exists. In reviewing the literature, no figures of importance on the general subject of the occurrence of skin disease in a large series of patients with tuberculosis have been found.

LUPUS ERYTHEMATOSUS

The literature on the subject of lupus erythematosus is extensive, and no attempt has been made to review it in full.

At the International Congress of Dermatology, held in London in 1896, Hutchinson [1] expressed the opinion that all forms of lupus erythematosus were tuberculosis of the skin. Hyde [2] believed that while many cases were tuberculous in origin, others were not. Gray [3] holds that lupus erythematosus is a clinical entity due to the local action of bacteria, the nature of which is not yet proved. Riehl [4] believes that various bacteria may cause generalized lupus erythematosus, and concludes that "the condition essential to the disease lies not in the nature of the virus but rather in the characteristics and the peculiar mode of reaction of the diseased skin." He also believes that light acts as a predisposing factor. Fonss [5] reviews the various proofs of the tuberculous origin of lupus erythematosus and concludes that, while in certain individual cases a tuberculous origin is probable, in the majority of cases such a causal relationship is unproved. Kreibich [6] reports three cases of lupus erythematosus associated with tuberculous adenitis, in one of which the actinic ray and the x-ray caused a flare-up. Gennerich [7] apparently believes that the disintegration of diseased lymphatic glands, resulting from tuberculosis or other infection, liberates a substance which is most likely to produce the clinical picture of lupus erythematosus by a destruction of connective tissue. He believes that it is more often located on the face because of the action of light and wind, and because of the rich vascular supply of facial tissue.

Cannon and Ornstein [8] maintain that this disease is local tuberculosis on the basis of five positive guinea-pig inoculations in twenty-three cases and their experience with tuberculin tests. They cite the positive animal inoculations and microscopic observations of other authors. Zumbusch [9] disagrees with the statement of Ehrmann and Finkelstein [10] that acute lupus erythematosus is always of tuberculous origin. He feels that *Streptococcus viridans* and other organisms may be responsible, and cites cases in illustration. Fullenbaum and Fleck [11] believe that various bacteria, acting on light-sensitized skin, may produce lupus erythematosus. MacLeod [12] and Stumpke [13] express the same view. Low and Rutherford [14] report a complete autopsy on a patient with chronic discoid lupus erythematosus who had died of intercurrent disease in whom no evidence of tuberculosis could be found, either macroscopically or microscopically, all organs and lymph glands having been examined. Milian and Myer [15] report in detail a case of acute lupus erythematosus in which clinical examination for tuberculosis, including sputum examination, tuberculin test and biopsy, was negative before death. Postmortem examination failed to show any evidence of tuberculosis, though a culture from the spleen yielded a streptococcus and a bacillus. Civatte [16] reviews the various hypotheses relative to the etiology of lupus erythematosus and concludes that, while lupus erythematosus may be the result of a tuberculous focus in the lymph node, nevertheless certain cases are caused by the action of the solar ray on substances present in the skin, and, in the majority of cases, it is due to the streptococcus.

Hartzell [17] reported a case apparently due to focal infection, and many similar cases are found in the literature. Goeckerman [18] gives the only figures with which I can make a comparison. Among fifty-six patients with lupus erythematosus adequately studied for tuberculosis, twenty, or 35.7 per cent, had tuber-

* Read before the section on Dermatology and Syphilology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 14, 1928.

1. Hutchinson, Jonathan: Internat. Cong. Dermat. Off. Trans., London, 1896, p. 4.
2. Hyde, J. N.: Internat. Cong. Dermat. Off. Trans., London, 1896, p. 409.
3. Gray, A. M. H.: Brit. J. Dermat. **37:** 406 (Oct.) 1925.
4. Riehl, G.: Arch. f. Dermat. u. Syph. **127:** 343-359, 1919.
5. Fonss, A. L.: Arch. f. Dermat. u. Syph. **129:** 366-385, 1921.
6. Kreibich, C.: Arch. f. Dermat. u. Syph. **136:** 99-101, 1921.
7. Gennerich, W.: Arch. f. Dermat. u. Syph. **136:** 104-207, 1921; **138:** 403, 1922.
8. Cannon, A. B., and Ornstein, G. G.: The Tubercle Bacillus as an Etiologic Factor in Lupus Erythematosus, Arch. Dermat. & Syph. **12:** 691 (Nov.). 1925.
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10. Ehrmann, S., and Finkelstein, F.: Arch. f. Dermat. u. Syph. **141:** 408, 1922.
11. Fullenbaum, L., and Fleck, L.: Dermat. Wchnschr. **84:** 485, 1927.
12. MacLeod, J. M. H.: Lupus Erythematosus, Arch. Dermat. & Syph. **9:** 1 (Jan.) 1924.
13. Stumpke, Gustav: Dermat. Wchnschr. **82:** 289-293, 1926.
14. Low, R. C., and Rutherford, A.: Brit. M. J. **32:** 326 (Nov.) 1920.
15. Milian and Meyer: Bull. Soc. franç. de dermat. et syph. **30:** 434, 1923.
16. Civatte, A.: Ann. de dermat. et syph. **7:** 465, 1926.
17. Hartzell, M. B.: Lupus Erythematosus and Focal Infection, Arch. Dermat. & Syph. **2:** 441 (Oct.) 1920.
18. Goeckerman, W. H.: Is Lupus Erythematosus Discoides Chronicus Due to Tuberculosis? Arch. Dermat. & Syph. **3:** 788 (June) 1921.

culosis. In a miscellaneous group of cases of psoriasis and dermatitis herpetiformis, he found tuberculosis in 32 per cent of fifty-six cases. On the other hand, in thirty-seven cases of papulonecrotic tuberculid, erythema induratum and lichen scrofulosorum, the occurrence of tuberculosis was 84 per cent. From these figures his final conclusion is that, while the tuberculous origin of lupus erythematosus discoides has not been proved by experimental work, clinical observation, including his study, seems to favor varied etiologic factors.

Syphilis has also been regarded as a cause. Jeanselme and Burnier [19] found a positive Wassermann reaction in twelve of thirty cases of lupus erythematosus, two being acute cases. Arsphenamine brought about a disappearance of the lesions. Hudelo [19] also observed a case of lupus erythematosus showing a positive Wassermann reaction in which the lesions rapidly disappeared following bismuth treatment. Maggiulli [20] reports on this phase of the etiology of lupus erythematosus.

SARCOID

There is a general inclination to regard sarcoid as a tuberculid. The classic researches of Kyrle [21] in particular strengthen this view. He found, in an extensive and recurring case of sarcoid, that in a section taken on the tenth day, when acute inflammatory reaction was present clinically and histologically, tubercle bacilli were present in large numbers. On the twenty-first day, when the epithelioid reaction microscopically was more pronounced, tubercle bacilli were still demonstrable. But on the thirty-sixth day, when the epithelioid reaction was fully developed and the picture microscopically typical of Boeck's lupoid was present, tubercle bacilli were not to be found. This is confirmatory of the animal inoculation work of Rist and Rolland, reported by Sequeira,[22] and also that of Lewandowski.[23]

Nevertheless, Stillians [24] and deBella [25] record cases which they regarded as syphilitic, and Pautrier [26] also regards some cases as probably syphilitic. One of Dr. Hazen's cases, showing the classic microscopic picture, which cleared up completely on extirpation of infected tonsils and without other treatment, was reported by Whitmore.[27]

PAPULONECROTIC TUBERCULIDS

From the name of this disease, its association with tuberculosis would seem almost to be taken for granted. Goeckerman [18] found tuberculosis in 84 per cent of a group including cases of this condition. Nevertheless, Guy [28] reported two cases of papulonecrotic tuberculid, negative for tuberculosis but showing intestinal disease. Streptococci cultivated from the stools and inoculated into these patients reproduced the disease, whereas inoculation of healthy controls was negative. A case of acinitis, reported by Schamberg and Harkins,[29] revealed on culture a staphylococcus and a bacillus, the latter probably a variation of the colon bacillus but differing in being toxic for animals. None of these animals showed evidence of tuberculosis and the authors feel that *Bacillus x* was the cause of this case.

An effort to analyze the cases reported in society proceedings and case reports in the recent literature of various diseases usually regarded as tuberculous proved useless because so large a number were reported without reference to the presence or absence of tuberculosis. It is urged that, in the future, this point be specifically mentioned, as otherwise reliable data can never be collected.

PSORIASIS

Owing to the markedly low percentage of tuberculosis in psoriases reported here, it is interesting to note that Goeckerman [18] found tuberculosis in 36.4 per cent of eleven cases of psoriasis, and Nicholas and Lebeuf [30] found that in fifty-four patients with psoriasis, one third showed the presence of tuberculosis, cured or active, or had a history of tuberculosis in the family, and thirty-two patients gave positive complement fixation tests for tuberculosis.

TABLE 1.—*Incidence of Tuberculous Disease in Conjunction with Skin Disease in a Group of 2,539 Patients Examined at the Diagnostic Center*

	Cases	Patients with Skin Disease	Percentage of Patients with Skin Disease	Percentage of Patients with Tuberculosis
Tuberculous patients.....	759	315	37.15	29.8
Nontuberculous patients...	1,780	1,066	53.15	
Total patients.....	2,539	1,381	54.39	

This report is based on data obtained in a group of 2,539 patients whom I examined at the U. S. Veterans' Hospital Diagnostic Center, Washington, D. C. The group consisted almost exclusively of men. Each patient was given a complete skin and oral mucous membrane examination.

The diagnosis of tuberculosis in these cases may be accepted as being accurate within the limits of clinical examination. Every patient was subjected to a routine general examination by a competent physician. Chest roentgenograms and consultation with experts on tuberculosis were regularly resorted to in all cases in which the question of tuberculosis had to be decided. Usually the records of more than one hospital were available in the study of the cases.

Of the entire 2,539 patients examined at the Diagnostic Center, 1,381 or 54.39 per cent, presented some kind of skin disease. These do not include such conditions as cicatrix or cicatricial contraction. Of the 2,539 patients, 759, or 29.8 per cent, had tuberculosis. Of these, 315, or 37.15 per cent, had some type of skin disease, while among the 1,780 patients without tuberculosis, 1,066, or 53.15 per cent, had disease of the skin. Thus it will be noted (table 1) that the incidence of skin disease in the tuberculous group of patients was 16 per cent less than among the patients without tuberculosis.

LUPUS ERYTHEMATOSUS

Among the 2,539 patients examined, lupus erythematosus was encountered but once. This patient had pulmonary tuberculosis, and therefore the condition occurred once in 759 cases of tuberculosis, an incidence of 0.13 per cent in the tuberculous group.

A group of thirty case reports compiled and studied by the research subdivision of the U. S. Veterans' Bureau were also analyzed. In this series only two

19. Cited by Pautrier (footnote 26).
20. Maggiulli, G.: Pensiero med. **16:** 302-304 (May 31) 1927.
21. Kyrle, J.: Arch. f. Dermat. u. Syph. **131:** 33-68, 1921.
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24. Stillians, A. W.: Sarcoid and Syphilis, J. A. M. A. **77:** 1615 (Nov. 19) 1921.
25. DeBella, D. A.: Gior. ital. d. mal. ven. **64:** 1043, 1923.
26. Pautrier, L. M.: Ann. de dermat. et syph. **7:** 569, 1926.
27. Whitmore, E. R.: Type III Sarcoid Associated with Infection of Tonsils and Gums, Arch. Dermat. & Syph. **11:** 56 (Jan.) 1925.
28. Guy, W. H.: Etiology of Papulonecrotic Tuberculid, Arch. Dermat. & Syph. **8:** 754 (Dec.) 1923.
29. Schamberg, J. F., and Harkins, H. J.: Acinitis, with Particular Reference to the Bacteriologic Findings, Arch. Dermat. & Syph. **11:** 339 (March) 1925.
30. Nicholas, J., and Lebeuf, F.: Ann. de derm. et syph. **8:** 601, 1927.

patients, or 6.6 per cent, had a history or showed evidence of tuberculosis. In addition, I have adequate records of fourteen cases, private and dispensary, studied for tuberculosis, in which two showed evidence of the disease. Therefore, the percentage of tuberculosis in the forty-five cases of lupus erythematosus was 11.11 per cent. It will be seen that this is less than the incidence of tuberculosis found in the group.

TUBERCULID

Among the 2,539 cases there were six cases of tuberculid. The clinical diagnosis in each of these cases was confirmed by biopsy. Guinea-pig inoculation was also done, and the results were negative both for the tubercle bacilli and for other organisms. Three of these cases occurred in tuberculous patients. The incidence in the tuberculous group was 0.40 per cent, and in the nontuberculous group, 0.17 per cent.

PSORIASIS

There were fifteen cases of psoriasis in this group. None of these patients had tuberculosis. In addition to this, in a group of eighty-one patients with psoriasis studied by the research subdivision, it was found that four had tuberculosis. It is therefore seen that the incidence of tuberculosis in the ninety-six cases referred to was 4.16 per cent. This is a very low incidence and is very much lower than the incidence of tuberculosis in the whole group of 2,539 cases. Attention is invited to the fact that it is much lower than the incidence referred to by Goeckerman and by Nicholas and Lebeuf.

Table 2 indicates the number of cases and percentage of occurrence of each of the more common skin diseases in both the tuberculous and the nontuberculous groups, and of certain skin conditions not especially common,

TABLE 2.—*Incidence of Skin Disease in Tuberculous and Nontuberculous Patients*

Skin Disease	Total Number of Cases	Patients With Tuberculosis (759) Number	Patients With Tuberculosis (759) Percentage Having Skin Disease	Patients Without Tuberculosis (1,780) Number	Patients Without Tuberculosis (1,780) Percentage Having Skin Disease
Acne	44	7	0.92	37	2.08+
Dermatitis (eczema)	130	27	3.56	103	5.79+
Leukoderma	11	4	0.53	7	0.39—
Leukoplakia	81	22	2.90	59	3.31+
Lichen planus	5	2	0.26	3	0.17—
Livido reticularis	2	1	0.13	1	0.06—
Lupus erythematosus	1	1	0.13	0	....+
Papulonecrotic tuberculid	6	3	0.40	3	0.17—
Psoriasis	15	0	....	15	0.84+
Pruritus ani	8	2	0.26	6	0.34+
Staphylococcus infection of the skin	19	4	0.53	15	0.84+
Tinea cruris	79	15	1.98	64	3.60+
Tinea eczema	63	19	2.50	44	2.47
Tinea, others	662	147	19.37	515	28.93+
Tinea versicolor	33	7	0.92	26	1.46+
Tuberculosis cutis	2	2	0.26	0	....—
Chronic urticaria	6	3	0.40	3	0.17—
Verruca	56	15	1.98	41	2.30+
Xeroderma	6	1	0.13	5	0.28+
Skin disease, others	152	33	4.34	119	6.68+
Total	1,381	315	37.15	1,066	53.15

but of interest as a matter of record. In diseases of which there were comparatively few cases, the importance of the figures is, of course, much reduced.

Acne includes only cases of sufficient severity or wide extent to necessitate treatment. Milder grades were extremely common but were not recorded. There were forty-four cases, of which seven, or 0.92 per cent, occurred in the tuberculous group, and thirty-seven, or 2.08 per cent, in the nontuberculous group.

Dermatitis or eczema, exclusive of ringworm eczema, was found in twenty-seven, or 3.56 per cent, among the tuberculous patients, and in 103, or 5.79 per cent, among the nontuberculous patients.

Leukoplakia, psoriasis, pruritus ani, staphylococcus infections, such as furunculosis and folliculitis, tinea (including ringworm eczema), warts and xeroderma show a greater incidence in nontuberculous patients.

Special attention is invited to tinea versicolor. It is commonly stated that this disease is frequently associated with pulmonary tuberculosis. Undoubtedly this

TABLE 3.—*Skin Disease Among 1,381 Patients by Specific Diagnosis, Showing the Incidence of Tuberculosis*

Skin Disease	Total Number of Cases	Number of Patients with Tuberculosis	Percentage of Tuberculosis Coexistent with Skin Disease
Acne	44	7	15.91
Dermatitis (eczema)	130	27	20.77
Leukoderma	11	4	36.36
Leukoplakia	81	22	27.16
Lichen planus	5	2	40.00
Livido reticularis	2	1	50.00
Lupus erythematosus	1	1	100.00
Papulonecrotic tuberculid	6	3	50.00
Psoriasis	15	0	.....
Pruritus ani	8	2	25.00
Staphylococcus infections of the skin	19	4	21.05
Tinea cruris	79	15	18.99
Tinea eczema	63	19	30.16
Tinea, others	662	147	22.21
Tinea versicolor	33	7	21.21
Tuberculosis cutis	2	2	100.00
Chronic urticaria	6	3	50.00
Verruca	56	15	26.79
Xeroderma	6	1	16.67
Skin disease, others	152	33	21.71
Total	1,381	315	22.81

fallacy has arisen because patients with tuberculosis have more frequent chest inspections than those without tuberculosis. In this series, seven cases, or 0.92 per cent, occurred in the tuberculous group, and twenty-six, or 1.46 per cent, in the nontuberculous group.

On the other hand, the one patient with lupus erythematosus in the group had a coexisting tuberculosis, as had also the two patients with tuberculosis cutis. It is interesting to note the incidence of these two conditions among the 759 cases of tuberculosis, 0.13 per cent in the case of lupus erythematosus and 0.26 per cent in the cases of tuberculosis cutis. Thus, diseases that are associated by some authors with tuberculosis were no more common in this group than livido reticularis, pruritus ani, xeroderma, and lichen planus, all of which showed the same percentage of incidence among the 759 cases.

It will be noted that certain diseases showed a higher incidence in the 759 cases of tuberculosis than in the 1,780 nontuberculous cases; viz., lupus erythematosus, livido reticularis, chronic urticaria, and papulonecrotic tuberculid.

The comparative incidence of skin disease in the tuberculous and nontuberculous groups, as brought out in this study, particularly in the more common skin diseases, would seem to indicate that inflammations and infections of the skin are likely to occur less frequently among tuberculous patients than among the nontuberculous patients. Whether this is due to the immunity process in tuberculosis is purely a matter of speculation.

Table 3 shows the percentage of tuberculosis in the same group of patients. Among the 2,539 patients studied, 29.8 per cent had tuberculosis. Among 1,381 patients with skin disease, 315, or 22.81 per cent, were tuberculous. If these figures are accepted as representing the expected incidence of tuberculosis in these patients, it will be seen that variations from the normal are very few, as, for instance, patients with acne, xero-

derma and especially psoriasis, in which conditions there is a reduced incidence of tuberculosis. Lupus erythematosus, lichen planus, livido reticularis, papulonecrotic tuberculid, tuberculosis cutis and chronic urticaria show a greater incidence of tuberculosis.

SYPHILIS

Among the 2,539 patients studied there were ninety-four cases of syphilis, and of these, twenty-three were cases of neurosyphilis. Twenty-five of the patients had coexisting tuberculosis. Of the twenty-three with neurosyphilis, four had tuberculosis. Thus it will be seen that the incidence of tuberculosis among the seventy-one cases of syphilis was 29.57 per cent, while among the twenty-three cases of neurosyphilis the incidence was only 17.39 per cent, a difference of 12.08 per cent. Possibly tuberculosis has an action analogous to that of malaria in protecting the nervous system.

DEATH RATES

As evidence confirmatory of a possible relation between the occurrence of skin disease and the severity of tuberculous infection, it is interesting to note that among 421 patients with skin disease coexisting with tuberculosis analyzed by the medical service of the veterans' bureau in 1927, the death rate was 5.23 per cent, whereas the general death rate for tuberculous patients in that year was 10.58 per cent.

CONCLUSIONS

1. Tuberculosis of the skin among tuberculous patients was found to be infrequent.

2. Lupus erythematosus was found only once in 759 cases with tuberculosis. Among a total of forty-five cases of lupus erythematosus the incidence of tuberculosis was 11.11 per cent.

3. The incidence of tuberculid among tuberculous patients was greater (0.40 per cent) than among the nontuberculous patients (0.17 per cent), as shown in table 2).

Fifty per cent of the patients with tuberculid had tuberculosis, whereas the incidence of tuberculosis in the whole group of patients with skin disease was 22.81 per cent.

4. Tuberculosis was notably less prevalent in patients with psoriasis. This is the only common disease, and indeed the only disease in the hospital group, which did not occur in conjunction with tuberculosis. Among a total of ninety-six cases of psoriasis, only four, or 4.16 per cent, showed the presence of tuberculosis.

5. Among syphilitic patients in general in this group, tuberculosis is as frequent as among nonsyphilitic patients, but among patients with neurosyphilis tuberculosis is less prevalent.

6. From a study of the literature and from the results of this study, it would seem hazardous to associate any skin disease with tuberculosis because it occurred in tuberculous patients.

900 Seventeenth Street N.W.

ABSTRACT OF DISCUSSION

DR. DAVID LIEBERTHAL, Chicago: Dr. Eichenlaub paid a great deal of attention to lupus erythematosus, and what he reports corresponds with the general experience that in cases of the chronic discoid type of this disease the incidence of tuberculosis is not more frequent than in those patients who do have lupus erythematosus. However, in patients with the acute disseminated type of lupus erythematosus, tuberculosis may be found not infrequently. Dr. Eichenlaub's observations in regard to the common type of acne vulgaris agree with those made by others. However, we encounter cases of unusual forms, acne conglobata and similar types, with numerous large nodes and intensive scarring, in which tuberculosis may often be detected on thorough examination. I do not wish to assert that tuberculosis is the cause of these severe cutaneous manifestations, but it may have an influence in their development in individuals with acne.

DR. GEORGE M. MACKEE, New York: Not long ago I had the opportunity of seeing most of the skin cases, over a period of about five years, at Saranac Lake, N. Y. There were quite a large number of the very common skin diseases, a few uncommon disorders and very few rare skin diseases. The most striking thing was the infrequent occurrence of any member of the tuberculosis group of skin diseases. There were a few cases of discoid lupus erythematosus, one case of lupus vulgaris, several cases of tuberculosis verrucosa cutis, one case of granuloma annulare, and one case of papulonecrotic tuberculid. There was not a single case of Bazin's disease, sarcoid, or lichen scrofulosorum. Tuberculosis of the larynx was fairly common. I saw one case of tuberculosis of the tongue, but not a single instance of tuberculosis of the nasal mucosa or of the mucous surfaces of the cheeks.

DR. ERWIN P. ZEISLER, Chicago: One of the things that impressed me was the high incidence of leukoplakia. I wonder how Dr. Eichenlaub would explain this, except on the basis that the patients were males and heavy smokers. Another thing was the absence of tuberculous lesions of the mucous membrane. I have been on the lookout for these and have found a number of cases of oral tuberculosis at the Cook County Hospital, most of them advanced tuberculosis. It would be important to know whether the groups of tuberculous patients examined by Dr. Eichenlaub reported mostly early or late stages of the disease.

DR. SAMUEL E. SWEITZER, Minneapolis: The Glen Lake Tuberculosis Sanitarium has about 750 beds, and it is interesting to note how few cases of skin disease are seen in these tuberculosis patients. Sometimes several months pass without my being called. Usually the cases are of common skin disorders, such as simple dermatitis or ringworm, with occasionally a tuberculid, and there have been one or two cases of lupus vulgaris. I have practically never seen a mucous membrane involvement of tuberculous origin. In this institution they have all grades of cases, from the very incipient to those of very advanced degree, with the patients at the point of death, and the thing that impressed me was that there have been so few diseases of the skin among the several thousand patients whom I have seen in that institution.

DR. HENRY E. MICHELSON, Minneapolis: The subject of tuberculosis of the skin is so important from the standpoint of allergy that I wish to mention one point. If a man has tuberculosis of the lungs and there is remission with a later recrudescence, it is nearly always pulmonary in type. If he has osseous tuberculosis and has a recrudescence, it is almost always a bone tuberculosis. In a period of twenty years the Ehrmann clinic found few cases of tuberculosis of the skin changing into a different type of tuberculosis.

DR. ARTHUR J. MARKLEY, Denver: Having had an opportunity to observe a large number of patients in the sanatoriums of Colorado during the past fifteen years, I can confirm what Dr. MacKee has said about the absence of diseases of the skin in tuberculous individuals that can be directly traced to this condition. There have been few cases of lupus erythematosus and lupus vulgaris. Tuberculosis verrucosa cutis is common, particularly on the knuckles of the hands as a local infection from wiping the lips after expectoration. Such diseases of the skin as do occur are due not to the tuberculosis itself but to the secondary effects of that disease on nutrition, and particularly on the gastro-intestinal tract, or they are wholly incidental. Acute tuberculous processes of the mucous membranes, such as ulcerations of the commissures of the lip, of the tip of the tongue and of the tip of the nose, are quite common in the advanced cases, but tuberculosis itself plays the same part in the incidence and production of skin diseases as do other chronic debilitating disorders.

DR. MOSES SCHOLTZ, Los Angeles: I wonder whether the infrequency of various types of skin tuberculosis among tuberculous patients may not be due to the function of the skin as

an immunity producing center against systemic involvement. In other words, could we not assume the inverse immunologic relation between the primary tuberculosis of the skin and the systemic tuberculous involvement by analogy with a well accepted clinical observation of the antagonism between cutaneous syphilids and neurosyphilids?

DR. FRANK J. EICHENLAUB, Washington, D. C.: In regard to Dr. Lieberthal's remarks in reference to acute lupus erythematosus and tuberculosis, Finkelstein and Ehrmann assert that all cases of acute lupus erythematosus are of tuberculous origin, but in my paper I cite a case in which no evidence of tuberculosis could be found at necropsy, so evidently all such cases are not due to tuberculosis. In my patients with acne there was no relation between the acne and the severity of the tuberculosis. The question of leukoplakia and tuberculosis, referred to by Dr. Zeisler, has been taken up in detail in a previous article. Twenty per cent of seventy patients with leukoplakia had tuberculosis, while the occurrence of tuberculosis in the group as a whole was 31.4 per cent. Mouth lesions occurred only once, and in that case we were unable to recover the organisms, so a positive diagnosis could not be made. Very few of our patients had advanced tuberculosis, however.

CHRONIC NONVALVULAR DISEASE OF THE HEART*

HENRY A. CHRISTIAN, M.D.
BOSTON

One of the most interesting groups of patients with symptoms of cardiac derangement is that in which study does not reveal evidence of any lesion of the endocardium or pericardium. These patients may have hearts of normal size or hearts that are greatly enlarged. The valves do not show any abnormality other than dilatation of the valve ring. Pathologic study of such hearts may or may not reveal any lesion of the myocardium; even of the patients dying with signs of cardiac failure decidedly more do not show, except for hypertrophy, any lesion of the myocardium than otherwise. Such conditions may be classified as chronic nonvalvular disease of the heart, in contrast to chronic valvular heart disease. Cases of chronic pericarditis, though strictly speaking nonvalvular, are grouped separately and will not be discussed at this time.

When there are demonstrable lesions of the heart muscle besides hypertrophy, these are often some form of degeneration obviously of no very great duration, and hence only incidental in relation to evidences of cardiac failure that have been present for a long time, and certainly in no way causal in the production of any of the earlier cardiac inefficiency. Another not very infrequent finding in the heart muscle showing some organic lesion is the presence of small foci of infiltration with lymphocytes and plasma cells, usually perivascular in distribution. It seems scarcely possible that these could cause any serious interference with effective circulation, though in the past attempts have been made to attach much significance to them. A far less frequent finding is widespread fibrosis, a true chronic myocarditis, with definite evidence of injury to muscle fibers as shown by their partial atrophy or total disappearance, or a focal distribution of such a fibrosis, the latter not infrequently having developed as the result of obstruction to a nutrient artery to that particular area: in other words, a healed cardiac infarct. However, usually there is no clue as to the cause of the fibrotic lesion of the heart muscle. Rarely syphilis is the cause.

* Read before the Eastern Medical Society of New York, New York, April 13, 1928.

If it is true that often after death no demonstrable myocardial lesion other than hypertrophy is found, then it is probable that a much larger percentage of these patients, during the course of their symptoms, actually do not have any pathologic lesion in the heart muscle, at least none that modern pathologic technic could demonstrate were these patients suddenly from some cause to die.

Of the patients with heart disease, a very large portion of those in whom symptoms have developed after 40 years of age come in the group under discussion in whom there is nothing to point to either endocardial or pericardial lesions; they are patients without signs of valvular disease; their disability seems to depend entirely on inefficiency of the heart muscle. As already indicated, the pathologic study of such hearts very often does not show any pathologic lesion other than hypertrophy of the myocardium. From this it would seem that the disturbance in the heart muscle is functional rather than organic, or at least that it is of a nature not detectable by our present methods of pathologic technic.

Of the patients that complain of cardiac symptoms, a very large percentage are of the type just described. Many other patients when examined show little or no evidence of any pathologic condition of the heart, for, of the patients complaining of symptoms referable to the heart, more show a normal than an abnormal condition of the heart on physical examination. Therefore the number of patients with cardiac complaints who show organic lesions of the valves relatively is not large. In many of these patients electrocardiograms do not show any abnormality or only unimportant arrhythmias; a good number show the curves of left ventricular preponderance, while in a few there are arrhythmias of serious import or distorted ventricular complexes indicative of severe myocardial derangement.

As the heart is a muscular organ continuously doing work, fatigue must enter in some way into its function; that it does so but infrequently speaks for the very great mechanical efficiency of the normally functioning heart. That fatigue often enters into the working of a perfectly normal heart seems doubtful, unless the physical exertion is extreme. At times athletes at the end of grueling contests show evidences of myocardial fatigue, and this may force them to desist from continuing the contest. Mackenzie believed that such myocardial exhaustion arose from a blood supply insufficient to carry on such excessive muscle work. Myocardial fatigue or exhaustion, however, is in evidence following infectious and debilitating disease. Here in some way it is probable that the disease process has caused change in the myocardium, even though the microscope might not be able to demonstrate it, or that there are peripheral vasomotor disturbances that hinder circulation. Whatever the exact mechanism, since clinical examination, with any method, does not reveal any evidence of cardiac lesion, and as the condition is promptly recovered from, myocardial fatigue remains a reasonably satisfactory term.

These are the patients who at any age complain of great exhaustion or of palpitation following slight exertion. They have what they call "floppy hearts." They do not have true dyspnea, but they experience uncomfortable sensations in connection with respiration. Often they are sensitive to pressure in the region of the cardiac apex. On examination, the heart is normal in size. The cardiac sounds are normal in quality except for a slightly snappy character. The cardiac rate is easily accelerated. There may be from a few

to frequent extrasystoles. The pulse has a rather tapping quality. Beyond these slighter changes, all is normal. There are no signs of peripheral circulatory insufficiency, such as edema or passive congestion. Their complaints and conditions are those of so-called cardiovascular asthenia, except that the disturbance is temporary and entirely susceptible of cure, while cardiovascular asthenia is notoriously difficult to cure.

I think that a great many persons of all ages at times have just such cardiac disturbances and that they are often greatly alarmed by them. Rest and reassurance is all that is needed in the way of treatment. Usually, on questioning, an adequate cause for the condition can be found in antecedent infections, in debilitating diseases with a too short convalescent period, or in overfatigue incident to one's occupation along with loss of sleep and possible worry.

Perhaps the disturbance may be largely in the peripheral circulation, but it has always seemed to me that myocardial fatigue with increased irritability of the neuromyocardial system played an important part and that myocardial fatigue was not a bad name for the condition, especially as it embodies the idea that facilitates the patient's understanding of what is going on in his heart and impresses on him the need of what is most important in the cure; namely, rest, with later a gradual, graded return to normal physical activity. The important thing to remember is that the patient, as just described, does not have any serious cardiac disease, and that he should by no means be told that he has heart disease. One not infrequently sees such patients who years before had been told that they had a weak heart and who have led thereafter a life of semi-invalidism of their own making, though there was never any evidence of heart failure. These patients go through serious illnesses and surgical operations without any circulatory upset. How they do enjoy discoursing on their "weak" hearts or, as they like to call them, "poor" hearts, and what a nuisance they are to their families and friends. The serious error there has been in making a diagnosis of heart disease in the beginning. Practically, it would be far better to overlook the possible, but very rare, serious cardiac condition than to make such a diagnosis as heart disease in the patient with no physical signs of a cardiac lesion, for though they do occur, except in angina pectoris, they are so very rare that their consideration need not enter into the diagnosis. Angina pectoris usually gives a history definite enough to warrant these cases not being overlooked.

If one were to arrange patients with only myocardial disturbances in a series, at one end, the mild end, would come this group that I have been describing, those with myocardial fatigue, and at the other, the serious end, those with chronic myocarditis, meaning thereby fibrosis of the heart muscle. The latter are relatively uncommon, and apparently cannot be distinguished clinically from those with muscle hypertrophy and no other change. Between the two comes a very large group of patients for whose cardiac condition there is no satisfactory term. The majority of these patients are past 40 years of age. They are the patients in whom the chief departure from normal is in the size of the heart. Hypertrophy is usual and is often very marked. The heart muscle itself as a rule looks very healthy and normal, both macroscopically and microscopically. That the heart was hypertrophied seems to have become its chief handicap. The explanation of why these hypertrophied hearts fail to function efficiently has been diligently sought, and many theories have been given in explanation, but none are really satisfying to the inquiring mind. These patients I have been in the habit of grouping with those who have actual connective tissue increase, and of speaking of them as having chronic myocarditis, because in many respects they resemble those with actual fibrosis, so much so that usually postmortem study is the only way of distinguishing them. However, this is not a good term, and of late I have come to diagnose these cases as chronic myocardial insufficiency, which seems to me an equally objectionable term because it does not separate these patients very satisfactorily from those with myocardial fatigue, nor does it clearly distinguish them from patients with valvular disease in which myocardial insufficiency is the chief cause of decompensation; but it does not seem to irritate some of my colleagues as much as does the term chronic myocarditis. So far as I know, no suggested term seems really satisfactory, and perhaps for the time being it is immaterial what we name these cases provided we make clear just what we are talking about. The main emphasis needs to be placed on the fact that it is a myocardial disturbance that primarily causes the cardiac disability, and that they show no organic valve lesion, no pericarditis, and often no coronary sclerosis. They may not show any murmurs, or a soft to loud systolic murmur which is heard best at the apex. To designate the condition mitral insufficiency suggests that the valve insufficiency is an important cause of the dysfunction, when it seems to be true that at most it is only the result of the dilatation of the mitral ring, and therefore a result, not a cause, of the myocardial insufficiency. Mitral insufficiency is decidedly an unsatisfactory term to apply in such cases.

The fact that so very large a proportion of the patients with nonvalvular disease of the heart are past 40 years of age suggests that the degenerative processes of later life are the main causes. Often they do show hypertension or arteriosclerosis, but not always, and exactly similar cases occur less frequently in early adult life, in childhood and in infancy. As far as can be judged from statistics, antecedent infectious diseases are not strikingly more prevalent in this group than in other persons of similar age without cardiac symptoms. On the other hand, one sees a quite definite sequence from such an infectious disease as pneumonia often enough to believe that at times there may be a causal relationship to infections. Possibly what has been described as myocardial fatigue may represent slighter disturbances of the myocardium entirely recoverable from, and so only a minor degree of this more serious myocardial insufficiency. If so, then cardiac hypertrophy would seem to be the chief line of demarcation between mild and serious myocardial disturbances. It does seem that, with few or no exceptions, cardiac enlargement marks the beginning of what sooner or later inevitably becomes serious cardiac disease and that, once hypertrophy of the heart is demonstrable, a train of events has begun which practically always ends in cardiac decompensation, unless some other cause interrupts the course of life. If this is true, heart hypertrophy is never a benign process, and whenever found should be considered seriously indicative of a progressive heart lesion whose progress we may be able to delay but not to stay. My own clinical experience is fully confirmatory of this view, and I no longer think of heart hypertrophy as a desirable compensatory process except when it is associated with valve lesions

that mechanically hinder proper cardiac function. Even here it is a question whether it may not be regarded as a second step in the downward progress of the patient, the first step having been the development of the valve deformity, and the final step an inability of the myocardium to maintain a circulation adequate for the proper function of the body.

Cardiac arrhythmia may accelerate but does not initiate this type of myocardial insufficiency. It is striking how often one sees patients with chronic myocardial insufficiency, or chronic myocarditis, either of these terms being used to describe a progressive cardiac disease in which the myocardium is at fault, whether it shows fibrosis or not, in whom heart rhythm remains regular and the electrocardiogram shows nothing beyond left-sided or right-sided muscle preponderance long after there have developed very marked symptoms and signs of cardiac decompensation, or even up to the day of the patient's death. Electrocardiography does not aid us greatly in the study of these patients, except in the occasional one who, with or without arrhythmia, shows the disturbed ventricular complex of evil prognostic moment.

The type of chronic myocardial insufficiency, or chronic myocarditis, in which the rhythm remains regular often presents a problem in diagnosis, especially when the heart rate is little accelerated and a thick chest wall or an emphysematous lung makes difficult the determination of the size of the heart. Frequently such patients, if they suffer from dyspnea of a paroxysmal type, as may happen, are diagnosed incorrectly as having asthma. Others with considerable cough are considered as having chronic bronchitis. In still others with extensive edema the condition is called nephritis, because the urine is decreased in amount and shows much albumin and many casts of varied sorts. The deception is increased by finding a decreased excretion of phenolsulphonphthalein and a moderately increased blood urea. It is to be remembered that in these patients cardiac enlargement may be the sole evidence of cardiac disease, and that this may be difficult to detect; murmurs may be absent or, if present, the murmur is merely a systolic one of any intensity from just audible to loud and rough, and finding it does not help in diagnosis for the same sort of murmur is found in apparently entirely normal hearts.

In these patients a therapeutic test of digitalis in good dosage, as a rule, promptly clears up all doubt as to the importance of the heart in the causation of symptoms. In those with edema it may be necessary to add to digitalis therapy dosage with some of the diuretics, such as theophylline (theocin) and merbaphen (novasurol), in order to remove the edema. The prompt and copious diuresis, when this is done, makes it evident that the patient possesses a kidney functionally capable of a considerable amount of extra work. After digitalis has been given with or without a diuretic, diuresis takes place; the urine no longer shows the large amount of albumin and the many casts; phenolsulphonphthalein excretion increases, and blood urea nitrogen decreases. In a patient seen at this time the mistaken diagnosis of nephritis would not be made.

Therapy in the group of patients just described is, as a rule, very satisfactory. Since many of these patients who respond so well to digitalis therapy do not have auricular fibrillation, it has always been a mystery to me why it is so generally thought and taught that digitalis is strikingly effective only in the presence of auricular fibrillation. I have evolved the following explanation of this belief and teaching. Digitalis is so generally thought to be measured in its effect by slowing the pulse that when the pulse is not strikingly slowed it is considered that digitalis is not effective, and its other effects are not recognized. These patients at rest often have only a slightly accelerated pulse rate, and it is true that digitalis changes it very little. However, for digitalis to stop dyspnea and cough or to cause a loss of edema and a great diuresis is certainly just as great a therapeutic triumph as to have it slow the cardiac rate. Another explanation may be that, since this type of case is not recognized as being primarily cardiac, the patient does not receive digitalis and consequently the physician has no opportunity to see the striking effect that would have been in evidence had the patient been given digitalis. Or possibly the physician does not weigh his patients, and so fails to appreciate the great loss in weight from the removal of edema that has occurred as a result of digitalis. If by giving a patient digitalis I can cause in ten days a loss in weight of from 60 to 70 pounds (27 to 32 Kg.) from the disappearance of edema, and such often occurs, or can stop the dyspnea and cough, to me these things are as striking effects as slowing the pulse from 140 or higher to 75 or 80. In these patients with myocardial disease, in my experience, the therapeutic results with digitalis are no better when auricular fibrillation is present than when the rhythm is regular. I feel that the time has come when the teaching that digitalis therapy is effective only in the presence of auricular fibrillation should be given up by every one. Its continuance does positive harm, for the physician often says, "The pulse is regular, digitalis will not be effective, so I will not give it." Of course, the man who reasons thus will never see a strikingly satisfactory result from digitalis in a patient with regular rhythm, simply because to that type of patient he never gives digitalis.

Another popular idea about patients with myocarditis is that they should not receive digitalis, since digitalis increases the work of the cardiac muscle and the diseased muscle will be injured by digitalis. After having given digitalis, sometimes in large doses or over long periods of time, to patients with myocarditis, I am convinced that there is no basis whatever for this idea. The heart may be too diseased to respond satisfactorily to digitalis, and all cardiac patients sooner or later reach this stage, but that digitalis in therapeutic doses is dangerous to them I feel sure is not the case.

The type of heart in which digitalis invariably does not cause any striking change in function is the heart that is normal in size, sounds and function. This to my mind is the striking example of when digitalis should not be used, not that it is harmful but because it is not beneficial. Patients that I have grouped as having myocardial fatigue are in this class, and yet one often sees them in their own opinion entirely dependent on a daily or twice daily dose of five drops of tincture of digitalis, which, by the way, would be about 2 to 4 minims daily or possibly as little as 1¼ minims. Others of these patients may take small doses of digitalis at intervals when their heart is "bad," getting an immediate relief, all of which goes to show that for such patients digitalis in such doses is not a cardiac medicine but one that works directly on the mind. For the physician who has made the original mistake of diagnosing such a patient as having heart disease, perchance such digitalis therapy can be excused. He may even think that these minute doses of digitalis do influence the heart in the sense of being a cardiac stimulant.

There is one particular form of chronic myocarditis which should be separated out on an etiologic basis. That is the form following hyperthyroidism, because it is the only one in which preventive measures are effective. Early treatment of the hyperthyroidism will prevent its occurrence. Even after auricular fibrillation develops, rhythm may be restored to normal by partial thyroidectomy. In this condition, iodine followed by partial thyroidectomy is more effective than digitalis, though digitalis may be needed during the days just prior to and soon after operation. Here may be mentioned, too, the much rarer case in which thyroid lack has led to cardiac hypertrophy and cardiac insufficiency, correctable by giving thyroid extract.

Except for the myocardial disturbance of thyroid disease, preventive medicine as yet does not play an effective part in the management of patients with myocardial disease. When hypertension and arteriosclerosis can be controlled or prevented, prevention will have a larger rôle in the management of chronic myocarditis. When the cause is learned of other types than those following hyperthyroidism, hypertension and arteriosclerosis, it will be possible to begin to discuss preventive measures for them. Syphilis in my experience plays a very minor etiologic rôle in myocarditis; when it is causative, antisyphilitic treatment is, of course, in order.

Throughout this discussion, I have purposely avoided any mention of cardial dilatation. One often hears that in a given patient cardiac failure has been the result of acute dilatation of the heart. Study in my clinic by x-ray of such an occasional case has shown a heart actually smaller than normal, certainly with no evidence of dilatation. The hypertrophied heart has enlarged cavities and in this sense is dilated; hypertrophy and dilatation accompany each other; dilatation is present with hypertrophy, whether there is cardiac failure or not, but I doubt whether dilatation is an important factor in heart failure. Certainly there is much to justify skepticism about it, and the indiscriminate use of dilatation of the heart in explanation of the development of cardiac decompensation should not be accepted without question.

Cardiac dilatation, other than as an association with cardiac hypertrophy, may occur but it must be very rare; I myself have never seen a patient in whom I could demonstrate such a dilatation. Just what part dilatation plays in the mechanism of progressive enlargement of the heart in which hypertrophy is taking place, and how far it contributes to the subsequent inefficiency of the heart, is far from clear. That it has some part seems certain, but I doubt whether it is more than one of several factors which together form the cause of what seems to be unquestionably true, namely, that once the heart begins to enlarge it has begun a change which regularly progresses into a condition of cardiac decompensation.

All this simply emphasizes the very important rôle of heart muscle in the function of the heart. Even without any lesion of pericardium or endocardium, including the valves, the myocardium is responsible in a great many patients for the symptoms of cardiac failure, even though the muscle itself seems normally nourished and devoid of evidences of degeneration or inflammation. Chronic myocardial insufficiency or chronic myocarditis is a very serious, disabling disease of the heart and, along with myocardial fatigue, as previously defined, is the cause of cardiac symptoms in an extremely large proportion of cardiac patients.

Peter Bent Brigham Hospital.

CONTROL OF PUBLIC MILK SUPPLIES*

WILLIAM F. KING, M.D.
State Health Commissioner
INDIANAPOLIS

History records attempts to regulate or control public milk supplies long before modern sanitary science became established. The city of Vienna in 1599 prohibited the sale of milk, butter and cheese for a time, because of an epidemic which was believed to have originated from these products. As early as 1739, suggestions are found as to cleanliness in the production and handling of milk. According to an early record, "Milk from old cows is not good; good milk is either white or yellow, not green or blue. Cows must be properly fed and straw cleaned; milkmaids must keep themselves clean and utensils must be clean. Unclean milk turns sour." Paris passed a milk ordinance in 1743 which was intended to regulate the keeping of cows and goats for milk. At the beginning of the nineteenth century regulations and ordinances were made effective in a large number of the cities of Europe, thereby giving a great impetus to the official control and supervision of milk supplies.

The first law for the control of milk supplies was enacted by the state of Massachusetts in 1856, with the intention of prohibiting the sale of adulterated milk. The office of milk inspector was created in Boston in 1859. However, it was not until late in the nineteenth century and in the early years of the present century that larger cities generally undertook the control of their milk supplies, and even at this late date the work was undertaken slowly. Most of the early regulations and ordinances were directed primarily toward skimming and watering of milk and toward adulteration through the use of preservatives. It is only within the past fifteen or twenty years that attention has been given to sanitation and cleanliness in the production and handling of milk.

NECESSITY FOR CONTROL OF MILK SUPPLIES

That there should be intelligent and effective supervision and control of public milk supplies is obvious and admits of no argument from the standpoint of public health. That the public is entitled to clean, wholesome and safe milk at all times admits of no doubt, both from an economic standpoint and from the standpoint of public health as well. Differences of opinion arise, however, as to who should exercise this supervision and control, how it should be exercised, what standards should be required and how strict laws rules and regulations should be made. There is a wide difference of opinion as to what constitutes clean milk or what constitutes safe milk, for it is true that clean milk may be unsafe and it is equally true that safe milk may be unclean. The U. S. Public Health Service has been advocating the adoption of a standard milk ordinance for several years and, in working out such a standard ordinance and in adopting a code for the interpretation of this ordinance, has endeavored to work with and to have the cooperation of practically every public health and dairy organization in the United States. An effort is made to bring public health organization and organizations of dairy interests into harmony so that all will work together intelligently for the public good. While this is a large undertaking, it

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is not impossible and there is no fundamental nor inherent reason why a complete harmony may not be established, at least on the essentials of milk supervision and control.

The fundamental purpose of milk control is to secure clean, safe milk for public use. For the purpose of this paper, clean milk may be defined as whole fresh milk from healthy cows which contains not less than 8.5 per cent of solids not fat, and not less than 3.25 per cent of milk fat, handled in a clean manner by clean and healthy people throughout the whole process of distribution and made safe by complete pasteurization as the ultimate factor of safety.

Those concerned in the milk business are the producer, the distributor, the consumer, the health authorities and the courts. From a public health standpoint the interest of the consumer is paramount, because the interest of the consumer is in reality the interest of the community as a whole, so that the milk business becomes in reality a community business. Because of this interest the community through its law-making bodies establishes standards and thereby makes its contract as to the quality of milk. The enforcement of such contract or law and the maintenance of standards thus established are placed in the hands of inspectors and health authorities, and disputes that may arise between the contracting parties are settled in courts.

Control of milk is carried out through food standards, bacteriologic standards, temperature standards and inspection standards. Food standards are intended to protect the consumer against visible dirt, skimmed or watered milk, adulterated milk and milk of low food value. Bacteriologic standards serve as a check on methods of production, handling and distribution, but it is not always true that milk attaining established bacteriologic standards is free from disease germs. Temperature standards are intended to insure prompt cooling of milk and the maintaining of its temperature as near 40 to 50 F. as possible, until it is delivered to the consumer. Inspection standards are intended to bring the dairy and its employees to the highest possible standard in equipment, cleanliness and safety, and to protect milk against disease-producing organisms through disease free cattle in the herd, through health examination of dairy employees, and through proper and complete pasteurization of the milk.

IMPORTANT PHASES OF MILK CONTROL

Inspection is an important factor in milk sanitation. It begins with the examination and test of animals for disease and includes, of course, the elimination of all diseased or unhealthy animals. It includes official inspection and control of methods of milk production, facilities for the well being and care of animals, the control of dairy equipment, cooling and handling of milk, methods of production and handling, and of all conditions connected with the transportation and delivery of the milk. Laboratory examination and check serves as a reliable indicator of weak places in the production and distribution chain, and is a most reliable guide to efficient inspection. Pasteurization, complete and certain, is of course the final safeguard from a public health standpoint.

Through the maintenance of food standards, bacteriologic standards, temperature standards and inspection standards, milk producers and distributors are enabled to serve the consumer with safe milk of good quality. It still remains, however, to educate the milk consumer in the proper care of milk in the home. This phase of milk control is as important as any. The householder must be made to realize that even the best milk will spoil quickly and become unfit for food and even dangerous unless it is kept properly. The householder can be instructed intelligently in this phase of milk control through the use of leaflets distributed in the homes, carrying specific directions as to the protection of milk from dust and heat and the proper care of milk bottles. Rules and regulations adopted and promulgated by health departments are of value in bringing about intelligent cooperation on the part of the householder. It has been said that "The milk business is not the farmer's business, not the distributor's business, nor yet the consumer's; it is the community's business and unless the people of the community work together for good milk they will never get it."

WHY MILK SUPPLIES SHOULD BE SUPERVISED AND CONTROLLED

It is well known that milk is a splendid medium for the transmission of certain diseases. The germ of tuberculosis and of septic sore throat may be transmitted directly from diseased cows to the consumer. Carelessness on the part of those who handle the milk may cause the milk to be contaminated with the germs of typhoid, with the infection of scarlet fever, and with the infection of diarrheal diseases and enteritis. The danger from tuberculosis can be removed only by eliminating this disease from milk-producing animals. The prevention of contamination of milk can be assured only through the elimination of all disease-carrying employees, workers and milk handlers.

There is another disease that is now attracting considerable attention in relation to milk supplies and which, judging from experience thus far, will not only assume greater importance but may in fact become an emergency at any time. What is generally known as infectious or contagious abortion in cattle is a disease that is widely distributed throughout the United States, although its economic importance has but recently been fully recognized. This disease in cattle is due to the *Bacillus abortus* of Bang, so named because Professor Bang, a Danish investigator, was the first to demonstrate this organism as the causative factor in abortion. There has been a feeling on the part of public health administrators for some time that there is a connection between contagious abortion in cows and the disease known as undulant fever in man. In Indiana an effort has been made to find cases of undulant fever and to study these cases in relation to contagious abortion in cows from which milk supplies are obtained. At South Bend fourteen cases of undulant fever have been found and, among the dairy cattle furnishing milk to that city, 40 per cent have been found infected with contagious abortion. Recently thirteen cases of undulant fever occurred among the students of Earlham College at Richmond. These cases were diagnosed on laboratory observations both in the laboratory of the state board of health and in the Hygienic Laboratory at Washington. In the dairy herd at Earlham College, consisting of twenty-two cows, seven were strong reactors for abortus, five were doubtful and ten were normal. *Bacillus abortus* was isolated from the milk of two of the reactors. In the Earlham College outbreak the cases were confined entirely to the student body, while the milk supply was entirely from the college dairy herd.

At a recent conference held at Purdue University, which was attended by the president of the state dairy-

men's association, the state veterinarian, representatives of the dairy and veterinary departments of the University and the state health commissioner, plans were discussed for protecting the public from milk of cows infected with contagious abortion and for eliminating this disease from the dairy herds of the state. It was stated by Dr. Craig, head of the veterinary department, that at least 50 per cent of the dairy herds of Indiana had contagious abortion varying from 2 per cent to practically 100 per cent in some herds. It was agreed that an intensive study should be made of contagious abortion by selecting one or more cities and making a test of all dairy cows furnishing the milk supply to those cities. It was also agreed that a study should be made at the same time as to possible cases of undulant fever in these cities and in the surrounding communities. The purpose of this study will be to determine the facts, as to both contagion abortion and undulant fever, in a typical community, and from this study to determine what, if any, legislation is needed to provide adequate control and regulation throughout the entire state, both for the protection of the dairy industry and for the protection of the public health as well.

The state health department with the American Child Health Association is making a milk survey which will include at least ten sections of the state. Certain cities have been selected as centers in which a portable milk laboratory will be set up to remain at least a week in each center. From this center, milk samples will be collected from cities and towns within a radius of from 25 to 30 miles, to be examined in the laboratory, and at the same time a survey will be made of milk production, handling, distribution and pasteurization within the entire area. With the information thus obtained from a typical cross-section of the entire state, and the information to be obtained from the contagious abortion survey together with information available from the state veterinarian's department, the state live stock sanitary board and the agricultural department of Purdue University, a definite and effective legislative program for the control and eradication of contagious abortion from dairy cattle throughout the state will be presented to the coming legislature. As a further check on undulant fever, the bacteriologic laboratory of the state health department has been making, and will continue to make, standard agglutination tests on all bloods submitted to the laboratory for typhoid diagnostic test. Two cases of undulant fever have been found in this way.

A STATE-WIDE PROGRAM

The Indiana State Board of Health has adopted a definite program for the purpose of bringing the milk supplies of the state to the highest possible standard of safety. The program in brief may be outlined as follows:

1. *Maintenance of a Central Milk Laboratory in the Department.*—This laboratory has been established for four years and during that time has been used by approximately twenty-five cities for systematic check on the milk supplies of these cities. In addition to this, the laboratory has made frequent tests of milk samples and samples of other dairy products collected by food inspectors from the department or submitted voluntarily by dairymen, milk plants and manufacturers of dairy products. The work of the central laboratory will be continued, and every effort will be made to extend the services of the laboratory.

2. *Milk Survey.*—A general milk survey covering the entire state was carried out in October, November and December of 1926 by food inspectors of the state health department in cooperation with the local health officers, the state dairy products association and the local sanitary and milk inspectors. The results of this survey were published in the monthly bulletin of the state board of health in a series of articles in 1927. The information thus obtained is of the utmost value and constitutes the basis of plans and methods for carrying out a cooperative state-wide program of milk control.

3. *To Secure the Enactment of Effective Milk Ordinances in All Cities of the State.*—At the time a general milk survey was made in 1926, it was found that twenty-one incorporated cities of the state had a milk ordinance. Only a part of these cities required pasteurization, but all had some form of milk inspection. Five of these cities had municipal laboratory service, the others using the state laboratory in a more or less systematic way. Since the survey was made in 1926, two cities have adopted a milk ordinance, requiring pasteurization of all milk. At the present time new milk ordinances or modifications of present milk ordinances are being considered in several cities. So far as the state health department is concerned, its efforts will be devoted to securing complete pasteurization as a requirement in all ordinances, together with physical examination of milk handlers and the best possible inspection and follow-up service.

4. *To Secure the Elimination of Tuberculosis and Infectious Abortion from All Dairy Herds and from All Cows Furnishing a Public Milk Supply.*—The elimination of tuberculosis is being carried out largely through the activities of the state live stock board and the state veterinarian, with the cooperation of the United States Bureau of Animal Industry. Provision is made by state law for compensating the owner for loss involved in the destruction of tuberculous cattle. At the present time sixty counties out of a total of ninety-two counties in the state are practically free from tuberculosis. The elimination of this disease is progressing satisfactorily, and while this is primarily the work of the state veterinarian yet the state health department gives all the support and cooperation it can to the work. Conferences have been held with the state veterinarian, the live stock sanitary board, the state dairyman's association, Purdue University and the state dairy products association in regard to the menace of infectious abortion, both to the dairy industry and to the public health. There is complete agreement as to the necessity of legislation giving the necessary authority to the state veterinarian's department and the state health department to meet the situation effectively. Since all organizations and departments interested are in accord, it seems practically certain that the next legislature will not only enact necessary laws but also provide necessary appropriations for carrying out this work.

5. *Cooperation.*—In order to carry out any effective control program it is necessary, of course, to have intelligent and sympathetic cooperation on the part of organizations interested in the milk and dairy products industry and to have the same intelligent and sympathetic cooperation on the part of all departments, both state and local, that have responsibility and authority. This means not only state and local health departments but also state and local veterinarians, dairy products organizations, manufacturers of dairy products, owners and operators of milk distributing plants,

agricultural schools and universities, county agents, and especially farmers organizations such as farm federations and farm bureaus. This cooperation can best be secured by obtaining and presenting actual facts in relation to economic loss from infected and diseased cattle, from slipshod and careless methods of production and distribution, and from actual facts as to human loss from the standpoint of public health. Back of this cooperation must stand legal authority and jurisdiction, to be enforced when necessary but only when necessary.

6. *Education of the Public.*—It has been stated in this paper that "unless the people of a community work together for good milk they will never get it." This is absolutely true. Through the various agencies mentioned the whole public must be brought to know the economic and health value of good, clean, safe milk. With an intelligent public sentiment, crystallized into a state-wide demand for safe milk, nothing remains but to direct this sentiment into lines of reasonable legislation, resonable rules and regulations and reasonable enforcement.

There is no more important responsibility of public health administration than that of protecting and safeguarding public milk supplies. The milk laboratory worker has proved that proper pasteurization surely destroys the ordinary pathogenic organisms at all likely to be found in milk. The practical health officer has observed the marked decrease in typhoid, septic sore throat, diphtheria and scarlet fever from milk-borne infection, coincident with the general introduction of pasteurization. In the light of our present knowledge and experience, complete pasteurization, as the ultimate factor of safety, of all milk and milk products intended for human consumption in any way should be the prime objective in any effort at supervision and control of public milk supplies.

102 North Senate Avenue.

ABSTRACT OF DISCUSSION

DR. A. S. GIORDANO, South Bend, Ind.: Dr. King is to be congratulated on bringing up an important subject which to date has been sadly neglected; namely, the transmission of *Brucella abortus* to man by milk. Perhaps it will be recalled that this possibility was suggested in 1913 by Drs. Larson and Sedgwick of Minneapolis. Evans again reminded us of this in 1918. In 1924, Dr. Carpenter of Cornell very definitely proved the point. My own experience substantiates the work of Larson, Evans and others. Of fourteen cases of undulant fever we have traced at least three to the milk supply. The safest milk is pasteurized milk, and I do not believe that pasteurization in any way affects the quality of clean milk. As to Dr. King's suggestion concerning the function of the state milk laboratory, I would rather urge cooperation in helping to establish local laboratories by ceasing to compete with them. The examining of milk after it has been in transit for a considerable length of time is worthless. The establishment of local laboratories in many places is discouraged by the state activities. In fact, many competent clinical laboratories are being closed by such competition. It seems to me that the function of the state board of health is to see that operating laboratories are fully efficient by means of frequent inspection and not by taking over their work.

DR. J. B. BERTELING, South Bend, Ind.: What will be the impelling factors in the future in the production of this universal food? Boiled down to the ultimate, they will be education and money; education of the farmer, education of the milk vender, education of the public, education of milk inspectors, education of future health officers, and, most important of all, education of the politicians who constitute the governing bodies of Congress and of state legislatures, county commissioners and city managers or councils, for from these must come appropriations for unlimited funds. For twenty years, the board of health of South Bend endeavored to have a milk ordinance adopted and it failed. What was the reason? Politics and industry, yes, but above all justifiable ignorance on the part of the city fathers. After they had listened to an hour's lecture on the germ theory of disease, they understood the necessity of a milk ordinance and then when 5,000 women petitioned them, and the state health department gave us its assistance, the ordinance was adopted without a dissenting vote. Twelve months later we eliminated all raw milk from this ordinance, and an absolute pasteurization ordinance was adopted. The author has the courage to plead for universal pasteurization because of what seems to be a new disease, namely, undulant fever, perhaps wrongly called malta fever. Why did we adopt an absolute pasteurization ordinance? Why does Dr. King plead for universal pasteurization? Primarily because in two opposite sections of Indiana, South Bend in the northwest and Richmond in the southeast, thirty cases of so-called malta fever occurred. What holds good for Indiana holds good for the country at large. Bacteriologists and clinicians have established the communicability of this disease from cattle to man through the medium of raw milk. Pasteurization destroys this organism; therefore pasteurization should be enforced by law.

DR. WILLIAM F. KING, Indianapolis: I have nothing to add to the discussion except to emphasize the importance of health officials giving attention to infectious abortion in cattle and undulant fever in man. I think that we are facing a real problem in this, one that is going to give us considerable trouble at best, and will give us more trouble if we do not begin to deal with it now. This was the principal purpose of my paper. I appreciate the consideration and the discussion given to the paper.

LOCAL ANESTHESIA AGENTS

PREVENTIVE AND EMERGENCY TREATMENT OF TOXICITY WITH ESPECIAL REFERENCE TO BARBITURIC ACID DERIVATIVES *

EDWARD G. MARTIN, M.D.

Proctologist, Detroit Receiving Hospital; Associate Proctologist, Harper Hospital; Consulting Proctologist, Grace Hospital; Associate Professor of Proctology, Detroit College of Medicine and Surgery

DETROIT

A young girl, in preparation for a minor anal operation, was given an injection of 15 cc. of a 2 per cent solution of procaine. Within three minutes clonic convulsions of her whole body began. She was in our clinic before students, and I told them that the convulsions would last about five seconds and then she would return to normal. Such had been my experience in two similar cases which I reported before this society in St. Louis in 1922 as idiosyncrasies to procaine, and in the discussion at that time it was decided that the reaction was due to epinephrine. This girl was kept alive for perhaps half an hour, when she died of respiratory failure. She could have been saved from death by the method presented today for emergency treatment, and the distressing experience could have been entirely avoided by the preliminary preparation which I have now used for more than a year. My clinical experience and animal experimentation, fortified by the experiments and observations of others dating back to Agda Hofvendahl's [1] original observation in 1921, justify these positive statements. Agda Hofvendahl is a Swedish physician, and her observations on cocaine poisoning were confirmed in their essential

* Read before the Annual Meeting of the American Proctologic Society, Minneapolis, June 11, 1928.

1. Hofvendahl, Agda: Zur Bekaempfung der Cocainvergiftung (Somnifen), Monatschr. f. Ohrenh., number 10, October, 1921, p. 887; Somnifen, Biochem. Ztschr. **117**: 55, 1921.

points by recent observers. Tatum, Atkinson and Collins [2] deserve especial mention; they confirm the results of others in finding that atropine, chloral hydrate, ether and morphine cannot be regarded as satisfactory antidotes for cocaine poisoning. They believe with others that the poisonous effects are located in the cerebrum, and that such effects might be prevented with hypnotics.

METHOD OF PREPARATION OF PATIENTS

For more than a year prior to August, 1927, I had prescribed 5 or 10 grains (0.3 or 0.6 Gm.) of barbital for most of my patients in the belief that a good night's sleep preceding an operation under local anesthesia made better patients of them. I observed that confusion, restlessness and depression occurred less frequently, and such symptoms were not unusual following the injection of from 20 to 50 cc. of procaine, even in 1 per cent solutions. In July, 1927, I read Carl Nielsen's article [3] on local anesthesia and concluded that my patients had been deriving benefit from barbital rather than from sleep. Since that time I have prepared each patient for local anesthesia by the oral administration of 10 grains (0.6 Gm.) of soluble barbital the night before, and 10 grains (0.6 Gm.) one hour prior to the operation. As a result of my propaganda, similar preparation has been almost universally adopted by the laryngologists at Harper Hospital, and I may fairly report that no serious trouble has been experienced and only three minor disturbances, following the use of local anesthesia in several hundred cases. The resident laryngologist succinctly stated: "It makes good patients out of bad ones." Two patients became much excited after the procaine was injected, one requiring general anesthesia, while the other was returned to his bed; he was prepared on another day without barbital, morphine being used, and reacted in the same way. A third patient lost consciousness one hour after a caudal anesthesia, but was promptly restored to normal by 1 cc. of ephedrine solution.

TWO TYPES OF TOXICITY

There are two types of toxicity resulting from procaine injection. The first, which is the more serious, is due to irritation of the nerve centers and quickly results in paralysis of respiration; this follows clonic convulsions. The second, lowered blood pressure, is perhaps due to a similar indirect cause. I believe it is the last type which often alarms the operating room personnel. The patient who gets "pale and clammy," feeling that "things are a long way off," needs something to raise his blood pressure. A blood pressure reading should be made before each injection of local anesthesia and the pulse carefully watched for an hour afterward. Ephedrine might be given as a routine by mouth or hypodermically before and after operation.

IDIOSYNCRASIES

In two cases of known idiosyncrasy, depression was apparently prevented by the method of preparation. In a nurse who always became ill and dizzy following the topical application of cocaine solution in her nose, the symptoms were entirely overcome with 5 grains (0.3 Gm.) of barbital before each treatment. The second patient, a man who had lost consciousness after the topical application of cocaine to his nose and had remained in a precarious condition for nearly two hours, was operated on for hemorrhoids following the administration of 15 grains (1 Gm.) of soluble barbital; more than 40 cc. of a 1 per cent solution of procaine was injected without any unusual symptoms resulting.

EXPERIMENTAL WORK

In a short series of nine experiments on the use of soluble barbital and procaine, I was assisted by Dr. M. P. Meyers, who worked with me on dogs in the experimental department at Harper Hospital. We made two definite determinations and also drew a number of conclusions. We determined that 200 mg. per kilogram of body weight was not necessarily a lethal dose, but that 300 mg. per kilogram, administered hypodermically in 10 per cent solution four days later, produced death in thirty minutes. Tonic convulsions—yelping and labored breathing, quickly followed by running movements — preceded clonic convulsions involving, in a particularly striking manner, the jaws; death followed these clonic convulsions in ten minutes. We also determined that a dog given a lethal dose of 300 mg. per kilogram of body weight could be saved from death and the convulsions controlled within four minutes by the intravenous administration of a solution of soluble barbital; that a return of convulsions is possible and can again be controlled and that even a third dose may be necessary to produce quiet and restful sleep.

CONCLUSIONS

1. We believe that procaine is not very poisonous in the usual dosage.

2. If a man (weighing 168 pounds, or 76 Kg.) could be compared to a dog, he could take 340 grains (22 Gm.) of procaine in 10 per cent solution and be saved from death by the intravenous administration of 120 grains (7.8 Gm.) of soluble barbital in divided doses.

3. In man with an average dose of 20 grains (1.3 Gm.) of procaine in a 1 or 2 per cent solution, 5 or 10 grains (0.3 or 0.6 Gm.) of soluble barbital dissolved in 120 minims (8 cc.) of water can be administered intravenously with the expectation of controlling toxic symptoms.

4. We believe that an idiosyncrasy is responsible for most toxic exhibitions.

5. Ten grains (0.6 Gm.) of soluble barbital by mouth given about one hour before operation will prevent the development of serious toxic symptoms in most instances.

6. Investigation and experimentation in this field are far from complete or conclusive, and an independent and exhaustive study of the different salts of barbituric acid should be made to determine their individual efficiency in the detoxication of local anesthetics.

PROTOCOLS OF EXPERIMENT

DOG C

Experiment 1.—Conducted, May 30, 1928, on a large brown male weighing 27 Kg. (60 pounds).

10: 55 a. m., 5.4 Gm. (85 grains) of procaine injected subcutaneously (200 mg. of procaine per kilogram of body weight).

11: 03 a. m., nervous; very unsteady on legs; jerks head when turning it from side to side.

11: 12 a. m., condition aboout the same; very dizzy; squats down on floor.

11: 15 a. m., spreads out all four legs; very jerky but mentally alert.

11: 20 a. m., marked tonic convulsion; falls on side; difficulty in breathing.

2. Tatum, A. L.; Atkinson, A. J., and Collins, K. H.: Acute Cocaine Poisoning, J. A. M. A. **84:** 1177 (April 18) 1925; J. Pharmacol. & Exper. Therap. **26:** 325 (Dec.) 1925. Tatum, A. L., and Collins, K. H.: Acute Cocaine Poisoning and Its Treatment in the Monkey (Macacus Rhesus), Arch. Int. Med. **38:** 405 (Sept.) 1926.

3. Nielsen, Carl: Treatment of Acute Poisoning from Local Anesthetics with Hypnotics of the Barbituric Acid Series, Chemio-Therapy, July, 1927.

11:27 a. m., continues very sick; rapid breathing; groaning and running movements of legs (lying on side).

11:42 a. m., quieter but running movements continue with less violence; breathing improves very much.

11:50 a. m., opisthotonos pulse, fast but good quality and regular; tonic convulsions of legs.

12:00 noon, very rapid breathing; otherwise quiet.

12:03 p. m., responds to calling; raises head and wags tail; sits up.

12:15 p. m., walks; panting rapidly; recovery at this time.

With this experiment we had hoped to establish the minimum lethal dose, but the dog did not die.

EXPERIMENT 2.—Conducted, June 3, 1928 (four days later).

11:50 a. m., 8.1 Gm. (121½ grains, or 300 mg. per kilogram) of procaine was administered hypodermically in 10 per cent solution.

12:00 noon, tonic convulsions began with yelping while he lay on his side on the floor; legs were stiff; markedly labored breathing; running movements quickly followed.

12:10 p. m., real clonic convulsions involving particularly the head and jaws, as well as body; pulse rapid and weak; running not countable.

12:15 p. m., clonic convulsions continue about every five seconds; irregular breathing interfered with by convulsions.

12:19 p. m., convulsions cease; legs and tail straighten out slowly; relaxes.

12:20 p. m., dead.

A lethal dose was established; a minimum lethal dose was not established. The rapid death may have been influenced by the previous dose four days earlier.

DOG D

EXPERIMENT 1.—Conducted, May 30, 1928, on a husky yellow male weighing 18.19 Kg. (42 pounds).

10:08 a. m., 1.25 Gm. (20 grains) of soluble barbital given in capsules by mouth (66 mg. per kilogram of body weight).

10:25 a. m., becomes sleepy—"groggy."

11:30 a. m., awake; resists efforts to tie him down; very active.

This amount of soluble barbital was not sufficient to make this "husky" dog go to sleep. Procaine was not administered at this time, the administration being delayed to determine whether continued protection was afforded by the earlier administration of soluble barbital.

EXPERIMENT 2.—Conducted, June 3 (four days following experiment 1).

12:48 p. m., 5.67 Gm. (85 grains) of procaine injected in 10 per cent solution subcutaneously (300 mg. per kilogram).

12:53 p. m., twitches head; licks his lips.

12:55 p. m., howls; stiffens out legs; shows marked evidence of poisoning.

12:56 p. m., 0.945 gm. of soluble barbital injected intravenously.

1:00 p. m., four minutes later; howling lessens; legs relax; running movements begin; otherwise quieter.

1:05 p. m., released to floor; lying on side; unconscious; running movements; otherwise relaxed; grunts and groans in efforts at breathing.

1:08 p. m., hind legs are quiet; front legs continue running movements; labored breathing continues.

1:10 p. m. (twenty minutes after injection), no convulsions had occurred. (In dog D, after the same amount of procaine had been injected, marked convulsions of the jaws and other parts of the body were present in twenty minutes.)

1:18 p. m., severe clonic convulsions of the head, jaws and legs begin.

1:22 p. m., convulsions stopped; breathing was almost imperceptible; pulse of good quality. Death seems imminent. At this time 0.945 Gm., or 15 grains, of a 10 per cent solution of soluble barbital solution was again administered (second dose).

1:23 p. m., one minute later, breathing becomes deeper; he groans again and shows signs of improvement.

1:33 p. m., breathing continues labored (72 per minute); quiet otherwise; pulse 96 and of very fair quality.

1:36 p. m., unconscious and quiet.

1:47 p. m., pulse of excellent quality; pupillary reflexes still absent; pupils still dilated.

1:58 p. m., slow, occasional running movements of front legs; breathing slightly labored.

2:00 p. m., running movements of front legs increased.

2:06 p. m., running movements increased; groans; displays more effort to breathe; not improving; losing ground.

2:30 p. m., 300 mg. (5 grains) of soluble barbital administered intravenously; running movements continued more violently.

2:45 p. m., running movements continue; he is rolled over and all movements stop; he continues unconscious but sleeps more soundly, and with an approaching normal respiration.

3:00 p. m., ears are up; he licks chops and moves head slightly; pupillary reflexes returning; much better.

4:30 p. m., gets up on feet and walks.

Next day sleeps most of time. Second day still sleepy but suffers no apparent ill effects.

This dog had a lethal dose of procaine; he was saved from death by the intravenous injection of soluble barbital. Repeated injections are warranted in the presence of adverse symptoms.

1447 David Whitney Building.

THE INTERPRETATION OF CHRONIC INFECTIONS OF THE PROSTATE AND SEMINAL VESICLES

A CLINICAL, BACTERIOLOGIC AND SEROLOGIC STUDY *

RUSSELL D. HERROLD, M.D.
CHICAGO

Gonorrhea is a predisposing cause of chronic prostatitis and chronic seminal vesiculitis in the majority of instances, but the gonococci at this stage are rarely present, having been displaced by other bacteria. Persons with a remote history of gonorrhea are as likely to have a hematogenous infection as those with a negative gonorrheal history. It is probable that in either type the infection may sometimes occur by direct extension from urine of unrecognized descending infections. Occasionally, the mild type of so-called nongonorrheal urethritis may go by direct extension into the prostate without producing any definite posterior urethritis. However, the clinical evidence would seem to favor the view that many infections are postgonorrheal, either latent or active. In many postgonorrheal infections the activity of the prostatic infection is brought to attention, at least, by certain symptoms and signs. Changes in the urethra of an obstructive nature, with resulting urinary disturbances or urethral discharge, frequently are closely allied to a low grade infection of the prostate gland and seminal vesicles. A vicious cycle is established since each condition tends to aggravate the other. It is highly probable that the chronic excretion in small quantities of the toxic products from chronic infections of the prostate is directly responsible for the gradual increase of scar tissue at the points along the urethra previously injured by the original specific gonococcus infection. Strictures may be associated with nongonococcal infections, but these strictures are usually of the large caliber type. Other known contributing factors to virulence of the latent bacteria are sexual excess, exposure to wet and cold, extreme physical exertion and other conditions outside the genito-urinary tract, either acute infections like influenza or the more chronic debilitating diseases that act by lowering the vitality of the mucous membrane. It may be that chronic foci of infection in other parts of the body are more indirect than direct causes of increased activity. This would seem to be the condition, particularly in stricture of the ureter, in which the primary injury frequently results from a pyelitis of infancy and childhood, but often symptoms of ureteral stricture in adults seem to be related to foci of infection in other parts of the body. This would seem logical from our observations [1] that toxic substance is produced in broth cultures of virulent staphylococci and colon bacilli in a potency about equal to that of the toxic filtrate of the gonococcus as indicated by skin tests. These toxins probably produce changes in the ureter at the time of infection that are similar to those of gonotoxin on the urethra. Clinically, it is frequently observed that actual strictures of the urethra do not develop until years after the gonorrhea. Also, it is now recognized that many ureteral strictures must be dilated repeatedly in much the same way as urethral strictures. Secondary stimulation by foci of infection and the production of infil-

* From the John McCormick Institute for Infectious Diseases.
* Read before the Section on Urology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

1. Herrold, R. D., and Traut, E. F.: Skin Reactions with Pneumococcal and Other Bacterial Filtrates and Extracts, J. Infect. Dis. **40**: 619-628 (May) 1927.

tration at the previously injured areas would be a likely explanation of their delayed development. The action of these foci is not clear but could be explained on an allergic basis.

Localized symptoms or the various referred pains, of which backache in the lower lumbar region is the most common, are often proved by the therapeutic test to have their origin in chronic prostatic infection.

The prostate and the seminal vesicles may be the recipient of infection from other foci outside the genito-urinary tract. The clinical evidence of improvement in the infection of the prostate and seminal vesicles following removal or drainage of infected areas in the teeth and about the nose and throat is considered proof of this relationship. Wildbolz,[2] Swinburne[3] and a number of other observers in recent years have called attention to this route of infection as a source of prostatitis with or without the associated signs of non-gonorrheal urethritis. It is now considered a routine procedure in this type of urethritis to examine the prostate and foci outside the genito-urinary tract. Von Lackum,[4] more recently, has discussed a series of focal infections in which there was a negative gonorrheal history in 43 per cent. He states that approximately 40 per cent of prostatitis is hematogenous in origin and that dental and tonsillar infection is responsible for many of the cases. He also says that experimental prostatic localization occurred in about 70 per cent of the male rabbits infected. I[5] have previously shown that two thirds of the streptococci isolated from twenty-eight chronic prostatic infections could be classified by agglutination into two related groups.

Many observers in recent years have emphasized another class of infections in which conditions such as arthritis, systemic eye lesions, sciatica and many other systemic conditions have been assumed clinically to be caused by the infection in the prostate, as evidenced by improvement or cure after the treatment of the prostatic infection. The prostate may be the only focus of infection or it may be associated with other foci in the etiology of the systemic disease.

Bacteria and pus frequently persist for many months in the prostate and seminal vesicles even with constant conservative treatment. There are many instances in which it is difficult to determine how much consideration should be given the infection of the prostate and seminal vesicles as a causative factor in the production of referred pains or sexual disturbances, particularly in the neurotic type of person. It is not always easy to state whether the infection in the prostate and seminal vesicles is definitely a cause of arthritis or of other systemic disturbance.

Finally, there is a large class of infections, which may be termed silent infections, that are not associated with any symptoms or signs evident of systemic disease. These are encountered frequently in postgonorrheal examination for determination of cure or in routine health or premarriage examinations. The question arises whether they later may become active foci of localized infection in the prostate or of general systemic disease. It would be important to know whether the chronic absorption in small quantities of their toxic products over a long period of time might contribute to such remote conditions as nephritis, anemia, circulatory disturbances or degeneration of any of the organs similar to that known to occur from the continual absorption of other more definite poisons. It was to determine more accurately, if possible, the exact significance of this type of infection that this bacteriologic and serologic study was made, as well as to serve as an aid in the interpretation of the case presenting active subjective or objective manifestations, local or general, but of doubtful prostatic origin.

Twenty-six patients with chronic infections of the prostate and seminal vesicles have been investigated with the hope of getting some added evidence for the proper interpretation. Many of these patients have been under observation longer than six months. I have attempted to give more intense study to a few rather than to get statistical data on a large number.

Repeated cultures have been made for the incidence of the various organisms, but note has been made of the repeated predominance of the same type of bacteria in many instances. Often the same predominant bacteria have occurred in from two to six examinations at intervals during a period of from two to six months.

The bacteriologic identity of the same organism in succeeding cultures was further corroborated several times by the positive agglutination with the patient's serum and the bacteria isolated from specimens taken from the same patient at various times. The accompanying table shows the incidence of various bacteria as well as the repeated predominance frequently of the same bacterium. It may be seen from this table that the more common bacteria found, in their order of frequency, are *Staphylococcus albus*, the diphtheroid group, *Streptococcus viridans*, *Staphylococcus aureus*, hemolytic streptococcus and the colon bacillus. There is usually a mixture of two or more of these bacteria, but it was noticed that often the mixture occurred only at the edge of the plate where the heavy inoculation was made, while the rest of the plate, where the original inoculation had been streaked out with the loop, gave practically a pure culture of one type. This was particularly noticeable when a single type had been found as predominating in repeated examinations. These constant types were more often agglutinated by the patient's serum and would therefore suggest that the predominant organism in the streaks might prove to be an index of the more pathogenic strain.

The technic followed in the collection of the earlier specimens was careful sterilization of the anterior urethra with an antiseptic followed by irrigation with sterile water before collection of the expressed prostatic and seminal secretions in sterile centrifuge tubes. After the seminal fluid had been thoroughly mixed with the prostatic fluid, a part of the mixture or its sediment was then taken up with a cotton swab and the edge of a blood agar plate was heavily inoculated by rolling the swab several times over this area. The streaks were made in the usual linear method from this original inoculum. Later, in some cases, the repetition of cultures was made after the glans had been cleansed and the fossa navicularis swabbed with alcohol, after which the patient voided a part of the urine. Practically the same flora of bacteria was obtained as when the entire urethra had been irrigated. In a few instances of this type in which a slight urethral discharge was present, further cultures were made after the glans had been sponged with alcohol without an attempt having been made to swab out the fossa, with a resulting growth of the same predominant bacterium.

2. Wildbolz, H.: Metastatic Prostatitis, Cor.-Bl. f. schweiz. Aerzte. **46:** 129 (Jan. 29) 1916.
3. Swinburne, G. K.: Nonvenereal Infection of the Prostate, M. Rec. **91:** 363 (March) 1917.
4. Von Lackum, W. H.: Clinical and Experimental Data on Prostatic Infection, J. Urol. **18:** 293 (Sept.) 1927.
5. Herrold, R. D.: A Study of Streptococci from Postgonorrheal Prostatitis by a Quantitative Method of Agglutination and Absorption, J. Infect. Dis. **30:** 80 (Jan.) 1922.

This would seem to indicate that the generally accepted opinion that there are many varieties normally present in the urethra should be limited to the normal urethra. It would seem that the predominating flora of the urethra in chronic prostatitis is dependent on the continual bathing of the urethra with infected prostatic secretion or with the secretion in the voided urine, and that the normal flora is replaced by the more pathogenic bacteria.

The bacteria isolated in chronic prostatitis have been agglutinated by the patient's serum. The technic of agglutination in this work is as follows: Phosphate dextrose broth containing 0.1 per cent dibasic sodium phosphate and 0.1 per cent dextrose was inoculated with each organism isolated, and at the end of twenty-four hours agglutination was made with the corresponding serum of the patient from whom the culture was taken. The agglutinations were done in a dilution of 1:40 and 1:80 of the serum. The mixtures were incubated at a temperature of from 50 to 52C. and readings were made at the end of four hours and over night. The use of capillary pipets is a simple method of making the dilution, but the use of graduate pipets is preferable. There was sufficient growth with most of the bacteria in phosphate-dextrose broth for direct agglutination. However, it was found necessary often to grow diphtheroids in broth with 20 per cent of ascites or serum, after which the sediment was resuspended in phosphate dextrose broth. This method was used with other bacteria, particularly hemolytic streptococci, if spontaneous clumping occurred in the original growth. Agglutination readings were positive with one type of bacterium from each case nine times, and with two or more types eight times. Nine serums did not produce agglutination with any of the bacteria of the corresponding culture of the prostate and seminal fluid.

The presence of agglutinins in the patient's serum for the corresponding bacteria isolated from the prostatic secretions has been taken tentatively as an index that the organism agglutinated was pathogenic. As a further check on this tentative conclusion, a series of mouse inoculations was made. The technic of mouse inoculation was similar to that commonly used for pneumonic sputum. The expressed prostatic and seminal fluid was diluted with an equal part of physiologic solution of sodium chloride and 1 cc. of the mixture was injected intraperitoneally into mice.

If the injections were lethal for mice, death usually occurred between the third and the fifth day after injection. Cultures were made of the peritoneal fluid and heart's blood on blood agar plates. In the majority of instances one or more organisms known to be present in the injected fluid were recovered from the heart's blood, but occasionally the blood agar plates were overgrown by colon bacilli or gram-negative spreaders to such an extent that it was impossible to obtain the isolated colonies for complete identification. This was due, no doubt, to death occurring later than usual in pneumococcus sputum injections. However, in fluids known to contain streptococci, these organisms often could be seen in the cultures both macroscopically and microscopically. It was noticed that prostatic fluids that contained bacteria with positive agglutinating bacteria were more apt to kill mice. Eight of nine prostatic fluids that contained bacteria with positive agglutination were lethal for mice, while only three of ten were lethal with prostatic fluids from which no bacteria were obtained that were agglutinated by their homologous serums.

Repeated injections were made of one of the three prostatic fluids that contained definitely agglutinated bacteria but had not proved lethal for mice. The patient had been given a series of injections of autogenous vaccine in the interval between the original agglutination and the inoculation of the mice. There had been clinical improvement in the interval. This would suggest that possibly there is a decrease in the virulence of the bacteria or an increase in the tolerance of the host without their destruction, and may prove of value in the explanation of the spontaneous change occurring in diseases in which there is improvement or recovery clinically without a bacteriologic cure. This is frequently exemplified in the change from the disease to the carrier state.

*Results of Cultures and Their Agglutination with Homologous Serums of Twenty-Six Patients with Chronic Prostatitis**

Type of Bacterium	Predominant Bacterium with Positive Agglutination	Predominant Bacterium with Negative Agglutination	Not Predominant but Positive Agglutination	Not Predominant and Negative Agglutination	Intermittent Occurrence with Positive Agglutination	Intermittent Occurrence with Negative Agglutination
Streptococcus viridans	4	1	1	1	1	2
Staphylococcus aureus	3	0	1	3	0	3
Staphylococcus albus	4	3	4	10	1	3
Streptococcus hemolyticus	1	0	0	2	0	1
Diphtheroid group	2	2	1	10	0	3
Bacillus coli	1	0	0	0	0	0
Gram-negative colon-like bacillus	1	0	0	0	0	0

* Summary of agglutinations; serums agglutinating one type of bacteria, 9; serums agglutinating two or more types of bacteria, 8; serums not agglutinating any bacteria, 9.

Skin tests were made with twelve hour and three day growths of the whole expressed prostatic fluid in phosphate dextrose broth.

The tests with the supernatant broth of twelve hour growths in a dilution of 1:10 in physiologic solution of sodium chloride were negative in five of six cultures. The cultures were killed with phenol (carbolic acid) and heat at 56 C. Each broth specimen was tested on three patients with acute gonorrhea who did not have prostatic complications. Ten three days growths also were tested for the presence of skin reacting substances in dilution of 1:10. Four of these were positive, three doubtful and three negative. Three of the four giving definite positive results were prostatic fluids that in previous experiments had proved lethal for mice. Bacteria had been isolated also for which agglutinins had been found in the respective patient's serum. The other positive reaction with the prostatic growth was not tested by agglutination or mouse inoculation. Two of the doubtful and two of the negative skin reactors were not lethal for mice. The other two were not tested. The result of the skin reactions in this limited number of specimens would seem to corroborate the agglutination and the mouse virulence tests.

Autogenous vaccines have been made in five instances from agglutinable organisms, and a series of inoculations were used as an adjuvant to the usual treatment

of massage, provocative instillation and dilation. Two of these were vaccines of *Streptococcus viridans,* two of *Staphylococcus aureus* and one a mixture of *Staphylococcus aureus* and *Staphylococcus albus.* Vaccines were given in initial small doses and gradually increased to avoid allergic reactions. In one case the predominant referred symptom of backache was permanently relieved following expression of prostatic fluid and the injection of an autogenous vaccine when the previous treatment of massage alone had given only temporary relief. This patient had a dermatitis of the hands and arms that he was certain had developed shortly after the gonococcus infection. The noticeable improvement in the condition following injections of autogenous vaccines of staphylococcus suggests a possible relation between the staphylococcus infection and the dermatitis. It seems unlikely here that the vaccine had a nonspecific foreign protein therapeutic action since the patient had previously been injected with a gonococcus vaccine without a similar improvement in the skin condition. That it was an accidental improvement, of course, was possible. One patient in whom cultures had repeatedly shown *Streptococcus viridans* as a predominant organism was treated by a series of injections of autogenous vaccine of this organism. The patient had a definite infiltration of the seminal vesicles in spite of previous persistent local treatment by two competent urologists during a period of several months before entrance. In a previous study of postgonorrheal prostatitis, I[6] have observed a somewhat more frequent occurrence of this type of infiltration in cases in which streptococci were associated with other bacteria than in those in which there was an absence of streptococci. In this instance, autogenous streptococcus vaccines combined with local treatment was followed by a resolution of the vesicular infiltration. Similar definite improvement in the local pathologic changes and referred pains were noted in the other three cases with the combination treatment. In view of these results, the failure of some observers to obtain definite improvement with biologic therapy might be due to not obtaining the specific organism in sufficient numbers in the autogenous vaccine to get the necessary immunologic response. At any rate, the explanation sometimes given that the foci in the prostate cannot be the recipient of antibodies from the blood would seem not to be logical, since the antigenic products of the prostatic infection frequently were found to have produced a specific response in the respective serums.

COMMENT

It has been observed by clinical therapeutic tests that occasionally apical abscess with negative roentgenograms were apparent foci of infection, as shown by improvement in metastatic lesions following removal of such teeth. Again, there are instances undoubtedly of rather definite infected areas in the teeth, nose, throat, sinuses, cervices, prostate and seminal vesicles, when some or all of such foci may not be related to systematic lesions. Virulence tests along the line indicated in this paper may prove of value as an aid in determining a more exact relation between suspected foci and systemic manifestations without the necessity of subjecting the patient to the therapeutic test. The tests as indicated would in addition, seem to offer a more specific method of determining the value of biologic therapy with properly prepared autogenous vaccines.

6. Herrold, R. D.: Streptococci in Chronic Infections of the Prostate and Seminal Vesicles, Proc. Inst. Med. **3**: 189-191, 1921.

SUMMARY

Studies were made of the virulence of the prostatic fluids of twenty-six patients with chronic prostatitis and seminal vesiculitis to determine the more exact significance of this infection.

The same bacteria frequently predominated in cultures repeated at various intervals. These predominating types were more often positive in the virulence tests than other bacteria.

The groups of urethral flora in chronic prostatitis are often dependent on the infection in the prostate and seminal vesicles.

One or more types of bacteria isolated in cultures from the prostatic and seminal fluid are frequently agglutinated by the patient's serum.

Prostatic fluids containing bacteria agglutinable by the patient's serum were lethal for mice more often when injected intraperitoneally than those containing strains nonagglutinable with the homologous serums.

Skin tests with the supernatant broth of three day growths of the whole prostatic fluid inoculum seem to indicate that the fluids producing the greatest amount of skin reacting substance are more likely to be lethal for mice when injected intraperitoneally.

The tentative results of the virulence tests indicate that further studies to attempt a more definite evaluation of focal infections at their source are worthwhile.

It is probable that the value of autogenous vaccines may be enhanced if more care is used in the selection of the strains for the preparation of the vaccines, so as to include the bacterial types agglutinated by the homologous serum.

7 West Madison Street.

PRIMARY ADENOCARCINOMA OF THE EPIDIDYMIS

REPORT OF CASE *

A. J. SCHOLL, M.D.
LOS ANGELES

Primary solid tumors of the epididymis are rare. Among those of malignant type carcinoma is particularly infrequent, there being comparatively few verified cases of this kind reported in the literature.

Having recently seen a case of the latter type, I thought that it might be of interest to put it on record. The particulars of this case are as follows:

REPORT OF CASE

History.—A man, aged 22, came for relief of pain in the right inguinal region and because of swelling of the right testis. Fourteen months before the right testis had been severely injured while he was playing football. Eleven months previously he had developed a pain in the region of the right inguinal ring. This pain was dull and fairly constant, and did not radiate except to the scrotum. Six months before the right side of the scrotum started to swell, increasing gradually in size until at the time of admission it was about twice the normal size. The scrotal contents were very sensitive and constantly painful. There had not been any evidence of urethral infection, fever, or redness or inflammation of the scrotum. In spite of the swelling of the testis the patient had been very active, coaching a football team for the past six months. During this time he had lost 25 pounds (11 Kg.) but was now at what he considered his normal weight; he attributed the loss in weight to his activity.

* Read before the Section on Urology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

Physical Examination.—The patient was very well developed, weighing 195 pounds (88.5 Kg.). The heart was of normal size with regular sounds, and the lungs were clear. X-ray examination of the lungs was negative for signs of tuberculosis or tumor masses. The blood pressure was 130 systolic and 80 diastolic. There was no evidence of any urethral discharge; the prostate was normal in size, shape and consistency,

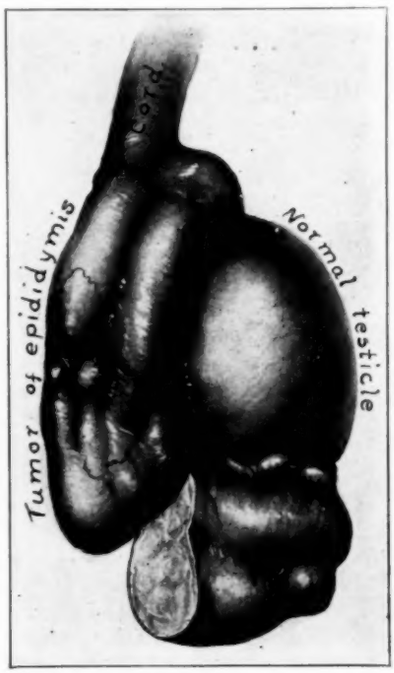


Fig. 1.—Epididymis hard and nodular; cut section shows fibrous areas; testis not involved.

and no secretion was obtained on moderate massage. The left side of the scrotum and its contents were apparently normal. The right half of the scrotum was distended and fluctuant, and transmitted light. The testis was seen in about the center of the fluid. A fine needle was inserted into the fluid sac and 2 ounces (60 cc.) of clear straw-colored fluid was withdrawn. The scrotal contents could then readily be made out. The testis was smooth, rounded and slightly larger than normal. The epididymis, which could easily be identified, was distinctly separate from the testis, markedly enlarged, nodular and irregular. The irregular mass felt very similar to the swelling caused by an acute and extensive tuberculous epididymitis. A diagnosis of epididymitis was made.

Operation.—The area over the inguinal rings, the cord and entire base of the scrotum were injected with a 0.5 per cent solution of procaine hydrochloride, which gave a satisfactory anesthesia. An oblique incision was made over the external inguinal ring, exposing the cord. Traction on the cord brought the testis and epididymis out of the scrotum. There were no scrotal adhesions. The cord was not thickened or in any way abnormal. The testis was not enlarged and apparently not diseased; it was smooth, rounded, and of a normal bluish white.

The epididymis was much enlarged and irregular in contour. The appearance and complete involvement gave the impression of a tuberculous epididymitis (fig. 1). The epididymis was readily separated by sharp dissection from the testis. There was no invasion of the testicular substance, which was normal in size, shape and consistency. The epididymis was nodular and reddish. The vas was separated and a short segment removed with the epididymis. Microscopic examination revealed the growth to be of malignant nature, so consequently the testis, the surrounding coverings and the cord were removed; the cord was cut at the external inguinal ring. A small rubber drain was inserted in the lower angle of the incision and the wound closed. The wound healed well and the postoperative course was uneventful.

Three months after operation a mass 2 cm. in diameter was found below the lower angle of the incision.

Second Operation.—Under gas anesthesia an incision was made over the mass, which was markedly adherent to the surrounding tissues. The fascia of the external oblique muscle was opened and the stump of the cord excised at the internal ring. The cord, tumor mass and all surrounding tissues, including the inguinal glands and subcutaneous tissue, were then removed. No enlarged inguinal glands were found. The wound healed well and the patient was given therapeutic x-ray treatment over the lower portion of the abdomen and the area of recurrence.

Four months after operation the patient became short of breath and cyanotic. Examination revealed that the right side of the chest contained a large amount of fluid. A needle was inserted into the base of the left pleural sac and 4 liters of blood-stained fluid was removed. An x-ray examination of the chest after removal of the fluid revealed a mass about 6 cm. in diameter in the region of the hilum of the lung. One week later a second tapping was done and 2 liters was removed. Since then the patient's chest has been tapped about once every ten days; from 2 to 3 liters of fluid is removed at each tapping. The fluid contains numerous, apparently malignant, cells. These cells are rounded and about one third larger than the endothelial cells, which the fluid also contains. With Wright's stain they are colored a deep blue, while the endothelial cells take a more reddish tinge. The cytoplasm is granular and many cells contain a round nucleus and an extremely large nucleolus. The patient is still under observation.

Dr. E. M. Hall reported on the pathologic conditions present.

Gross Pathologic Changes.—A fairly well circumscribed, hard, rounded tumor of the epididymis, 4.5 by 3 cm., was found. The cut surface was grayish white with whorls of fibrous tissue in evidence. The tumor did not involve the testis or the cord. There was no caseation, tuberculous nodules or gross evidence of infection.

Histologic Structure.—The growth involving the epididymis and the mass removed at the second operation were similar histologically. Sections showed a moderately cellular, fibrous stroma surrounding large numbers of irregular or elongated

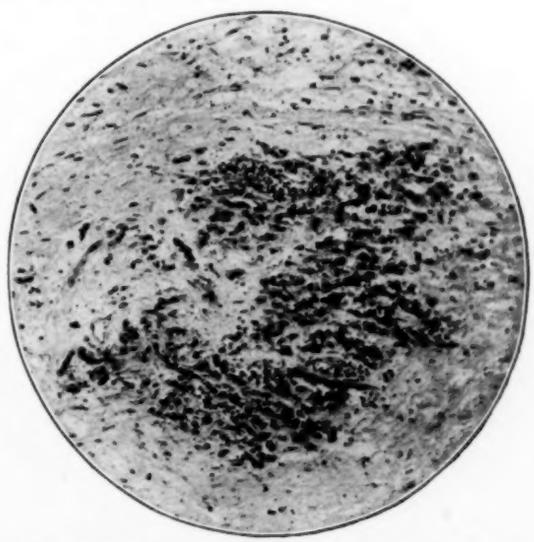


Fig. 2.—Marked fibrosis completely isolating small areas of malignant cells (× 100).

spaces completely filled with atypical epithelial cells, forming a distinctly adenocarcinomatous arrangement (figs. 2, 3 and 4). In many places the tumor was very cellular and a moderate number of mitoses were present. In most areas the cells were markedly irregular in size and shape and many contained prominent nucleoli (fig. 5). In some areas the efferent ducts of the epididymis were left intact; in other areas they were completely surrounded and separated from one another by areas of malignant cells. There was a fairly diffuse infiltra-

tion with polymorphonuclear leukocytes and some localized collections of round cells. In the broad bands of fibrous tissue there were several collections of golden brown pigment.

The diagnosis was adenocarcinoma of the epididymis.

COMMENT

It is impossible to state definitely that the tumor was not primary in some part of the body other than the epididymis. The x-ray examination of the chest cavity

Fig. 3.—Areas of glandular formation composed of cells of varying size.

taken at the time of the first operation did not reveal anything unusual and precludes the possibility of any extensive, primary pulmonary focus. The time of appearance and the type of the symptoms indicate a primary scrotal condition. The tumor might possibly have arisen from a testicular rest in the epididymis, but the extensive adenomatous type of the growth is very different from that usually found in testicular tumors.

SYNOPSIS OF THE LITERATURE

Hinman and Gibson,[1] in 1924, published an extensive paper on benign and malignant growths of the testis and its annexes. These writers classed tumors of the epididymis as:

A. Benign tumors:
   1. Epithelial.
   2. Mesoblasts: (*a*) lipoma; (*b*) fibroma; (*c*) myxoma; (*d*) leiomyoma.
   3. Heterologous: cystodermoids.

B. Malignant tumors:
   1. Epithelial: carcinoma.
   2. Mesoblasts: sarcoma; lymphosarcoma; melanosarcoma; spindle cell sarcoma.
   3. Heterologous tumors: teratoma seminola.

Of benign tumors of the epididymis, Hinman and Gibson found in the literature only six cases of leiomyoma and one case of lipoma. In a further search through the literature I find the following cases also reported: Poncet,[2] in 1887, reported a case of enormous fibroma of the tail of the epididymis. Sakaguchi,[3] in 1915-1916, reported a histologically verified adenoma of the epididymis in a man, aged 32, who was operated on for a long-standing thickening of the organ. The testis was normal. Eisenstaedt,[4] in 1923, reported a histologically verified fibromyoma in a man, aged 65. Fritzler,[5] in 1925, reported a histologically verified lipoma in a man, aged 57.

In regard to malignant tumors, Hinman and Gibson found only three cases of carcinoma in the literature; viz., the cases of Wrobel (primary carcinoma); Rowland and Nicholson (squamous cell epithelioma), and Sakaguchi (primary carcinoma). To these the authors added a personal case of adenocarcinoma, the first of this kind reported in the literature. To these should be added the cases reported by Colby,[6] in 1907, and that of Lapointe and Cain,[7] in 1923. In Colby's case the left globus major of the epididymis was found enlarged in a man, aged 32. Two years later this was much enlarged and the globus minor also was then enlarged. The testis was removed and found to contain cysts and columnar-cell carcinoma. There were abdominal metastases nine months later. In commenting on this case, Colby expresses the belief that many cases of carcinoma of the testis commence in this way in the epididymis. Lapointe and Cain's case was an epithelioma of the epididymis found after an epididymectomy in a man, aged 66, who gave the history of an old gonorrheal epididymitis. My case is the second recorded case of adenocarcinoma.

Hinman and Gibson, in regard to sarcoma of the epididymis, found ten cases reported after 1872 which may be accepted without question. Miyata's case is also added (fibrosarcoma of the tunic of the epididymis). In addition to the cases reported, that of Bazy,[8] reported in 1892, should be included. This was a histologically verified case of small-celled sarcoma in

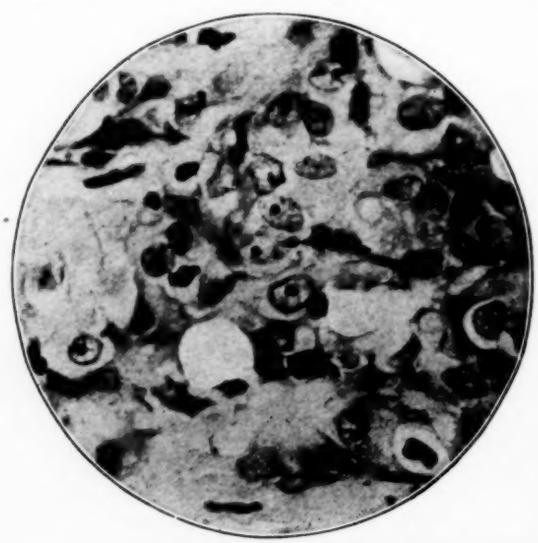


Fig. 4.—Irregular gland formation separated by strands of fibrous tissue (× 560).

a man, aged 48, who had suffered from gonorrheal epididymitis. Spandri[9] also reported a case of chondrosarcoma in 1904.

1. Hinman, Frank; and Gibson, T. E.: Tumors of the Epididymis, Spermatic Cord and Testicular Tunics: A Review of the Literature and Report of Three New Cases, Arch. Surg. **8**: 100 (Jan.) 1924.
2. Poncet, A.: Fibrome enorme de la queue de l'épididyme, Gaz. d. hôp. **60**: 479, 1887.
3. Sakaguchi: Adenom des Nebenhodens, Frankfurt, Ztschr. f. Path. **18**: 379, 1915-1916.
4. Eisenstaedt, J. S.: Fibromyoma of the Epididymis; Paraffinoma of the Peritesticular Tissues, Surg. Gynec. Obst. **37**: 361-364 (Sept.) 1923.
5. Fritzler, K.: Zur Kenntniss der Tumoren des Samenstranges, der Scheidenhäute und des Nebenhodens, Ztschr. f. urol. Chir. **18**: 271, 1925.
6. Colby, F.: Brit. M. J. **1**: 199, 1907.
7. Lapointe, A., and Cain, A.: Bull. et mém. Soc. de chir. de Paris **49**: 701, 1923.
8. Bazy, F.: Bull. et mém. Soc. de chir. de Paris, 1892, p. 488, in discussion on paper by Lapointe and Cain.
9. Spandri: Chondro sarcoma dell'epididymo, cited by Rubaschow.

In regard to sarcomas, Sakaguchi [10] remarks that the cases of Kolster [11] and Grossmann [12] were probably carcinoma. The endothelial theory of testicular tumors is scarcely admitted at present, and most authors think that large-cell testicular tumors are of epithelial nature. Sakaguchi himself thinks, however, that the occurrence of large round-cell sarcoma in the testis and epididymis cannot be excluded.

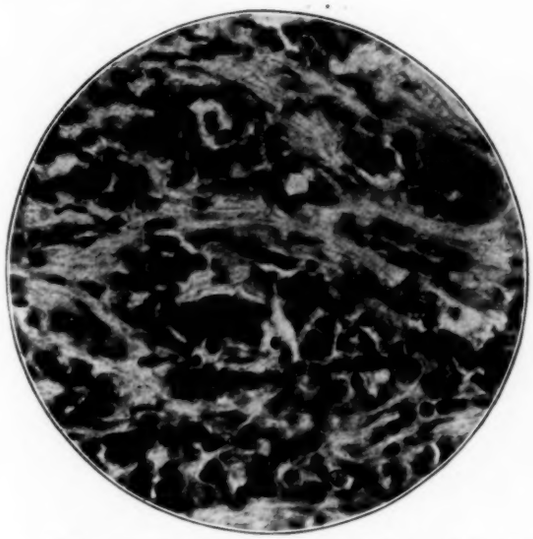


Fig. 5.—Cells grouped together irregularly without evidence of gland formation; nucleoli are very prominent (× 200).

Rubaschow,[13] writing in 1926, found only seven cases of epididymal sarcoma in the literature.

The literature in general shows that tumors of the epididymis are more frequent on the left side and that the site is usually in the tail or the corpus. No tumor has been reported in the head of the organ.

In addition to the cases of epididymal tumors under Hinman and Gibson's classification, a few angiomas have been reported in the literature. Conforti,[14] in 1910, reported a case of lympho-endothelioma. Hardouin,[15] in 1911, reported a case of angioma, and Rigano-Irrera [16] reported a case of lymphangioma in 1925.

523 West Sixth Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HERROLD AND SCHOLL

DR. A. G. FLEISCHMAN, Des Moines, Iowa: One has only to study carefully the literature pertaining to tumors of the epididymis to note the scarcity of authentic cases that have been reported. I have never seen a case of carcinoma of the epididymis. My experience with tumors of the scrotal cavity has been limited, in a great measure, to a teratoid kind. The results achieved by surgical treatment have been very unsatisfactory. Simple orchidectomy cures only from 15 to 20 per cent of tumors of the scrotal cavity, and 30 per cent of the cases may be expected to be cured by a radical procedure which the former has devised. It is evident, then, that this high incidence in the mortality rate is due in great measure to the surgical manipulative methods at our disposal. During the past four years I have been interested in the utilization of electrothermic methods in the treatment of malignant conditions of the genito-urinary tract. The results achieved with this method have been most satisfactory and superior to the other recognized surgical procedures. While I have not had the opportunity to resort to this method in the treatment of malignant conditions of the scrotal cavity, I feel that it would be most applicable. This method would prevent dissemination of cancer cells which so frequently occurs when we attempt their removal by the scalpel and is responsible for the frequent recurrences and the development of metastasis elsewhere in the body. In reference to the paper of Dr. Herrold I have been much interested in the use of medical diathermy as a therapeutic agent, as applied in the treatment of chronic prostatitis. The instrument that I employ is a special prostatic electrode devised by Dr. Cumberbacht, an English physician, which I have found most satisfactory. I have found that diathermy in the treatment of chronic prostatitis, and administered with this particular instrument, aids materially in bringing about a cessation of symptoms. It facilitates better drainage. It reduces in a great measure the need for vigorous provocative procedures. It renders certain prostates that are exceedingly sensitive to prostatic massage less so when the massage has been preceded by diathermic application. It is not my purpose to assert that diathermy should supersede other well known measures in the treatment of prostatic disease. However, I am of the opinion that diathermy will clear up these infections with a greater degree of celerity when they are employed in combination with other measures.

DR. THOMAS L. HOWARD, Denver: If Dr. Scholl did not supplement his surgery with some form of treatment, preferably x-ray therapy, to prevent the recurrence of the cancer, I think he lost three valuable months, for there was a recurrence first at the site of the original operation, and later in the lungs. To try to remove all the postperitoneal glands in cancer of the testis is a stupendous undertaking and certainly a very uncertain one, and there is no question in my mind but that deep x-ray therapy is a valuable adjunct. As to chronic prostatis, I think that the public, as well as the general physician, should be made to understand that we are dealing with three major foci of infection. They have for some years known that the tonsils constitute one focus and the teeth another and they must be taught that the prostate is a third great disseminator of infection. I have been impressed lately by seeing many eye cases in which the ophthalmologist had exhausted every means to find the focus that was the seat of his patient's eye infection. The tonsils and dead teeth had been removed in many instances without relief of the eye condition. In three cases I have isolated *Streptococcus hemolyticus* from the prostate and seminal vesicle secretion and with a vaccine given from this, with the addition of massages, the eye condition in these patients cleared up very rapidly.

DR. JOHN F. HOGAN, Baltimore: I have had five or six cases of gonorrheal prostatitis which failed to clear up under the usual measures, and I therefore attempted to uncover other foci of infection. In one instance an abscessed tooth was extracted and in the others tonsils were removed, after which the prostatitis promptly abated. Therefore it would be well in all gonorrheal cases, after the cultures are negative and in which the prostatitis persists, to seek other foci.

DR. JOSEPH F. MCCARTHY, New York: Following consultation in a case in which three other consultants had been called, only one of the four of us made a diagnosis of malignancy, and that was not the speaker. Fortunately, I discovered that a roentgenogram of the chest had not been requested. This was made at my suggestion and revealed an extensive metastasis to the lungs. This should teach us that in all tumors of the testis and epididymis an early roentgenographic examination for metastasis or pulmonary tuberculosis is a necessary routine diagnostic and prognostic measure.

DR. EDWIN W. HIRSCH, Chicago: I believe that I was one of the first to employ the vaccine Herrold made from virulent strains of gonococci. There has been much antipathy to the use of gonococcal vaccine, particularly in Chicago, because some of the leaders in venerology did not obtain results with vaccines and proclaimed them to be without merit. The reason for this pessimistic view was that these men were looking for a panacea for gonorrhea and when their resistant cases failed to respond

10. Sakaguchi: Frankfurt. Ztschr. f. Path. **15**: 62, 1914.
11. Kolster: Selten Sektionsbefunde (Fall X), Virchows Arch. f. path. Anat. **155**: 391, 1899.
12. Grossmann (Brune's case): Zur Kenntnis der auf. traumatisch Grundlage entstandenen Hodenssarkom, Inaug. Diss., Munich, 1900.
13. Rubaschow, S.: Ztschr. f. Urol. **20**: 290, 1926.
14. Conforti: Su di un caso di linfoendothelioma primitivo dell'epididymo, Morgagni **52**: 361, 1910.
15. Hardouin: Angiome de l'épididyme, Rev. de chir. **2**: 1398, 1911.
16. Rigano-Irrera, D.: Arch. itao. di chir. **13**: 552, 1925.

to gonococcal vaccine they discountenanced any virtue claimed for it. Vaccines came into use because it was noted that patients with high fever often got well of their gonorrhea. To imitate this condition milk and typhoid injections were employed. Milk has the disadvantage of necessitating an injection of from 5 to 10 cc., which is painful. Typhoid vaccine often leaves a headache which persists for several days. Herrold's vaccine has the advantage in that it requires only a small quantity to effect a rise in temperature. A potent vaccine will not in itself cure gonorrhea. It is intended particularly for the treatment of the complications of gonorrhea. Its most valuable property lies in its ability to centralize and bring to a head the multiple small foci in the prostate, which permits one to massage and express the major amount of pus. In this manner it accomplishes in a short time what would take diathermy a long time to do. Gonococcal vaccine, properly made, will help to eliminate infection when employed with other good standard treatment.

Clinical Notes, Suggestions and New Instruments

AN UNUSUAL CASE OF POLYDACTYLISM

DUNLAP P. PENHALLOW, M.D., WASHINGTON, D. C.

Congenital abnormalities are always of interest. While cases of supernumerary digits are not uncommon, such digits are usually rudimentary in character and are simply appendages to other digits. In the present case there is complete absence

Fig. 1.—Dorsal view of hands, showing absence of thumbs and replacement by two complete digits, resembling third and fourth fingers.

Fig. 2.—Palmar view of hands, showing lack of thenar eminence, in place of which is a broad, flattened surface resembling the palm and having palmar folds. The two digits are shown well abducted.

of the thumbs on each hand, each thumb being replaced by two complete and functioning digits. Heredity is believed to play an important rôle in these congenital abnormalities, but no hereditary history could be elicited in this case.

The person who presents this anomaly is J. D., a colored laborer, aged 50, well developed and nourished and of large frame, who was admitted to the hospital because of varicosities of both legs, associated with large varicose ulcers on the anterior aspect of the legs. The hands are symmetrical. In the place of each thumb are two completely formed digits which resemble the third and fourth fingers (fig. 1).

Fig. 3.—Hands with fingers flexed to form a fist, and with the supernumerary digits opposed and flexed across the true fingers.

Fig. 4.—Complete digital formation, showing the metacarpals, each having its own set of three phalanges. The two metacarpals that replace the thumb articulate with a slightly enlarged trapezium in the carpus. The extra metacarpals and phalanges are perfectly formed.

Each digit is separate from the other and is completely formed with three phalanges and with perfectly formed nails on each terminal phalanx, each set of phalanges having a separate metacarpal. On the palmar view of the hand, what would correspond to the thenar eminence is very broad but is not rounded and elevated as is the thenar eminence; and from this broad eminence emerge the two digits on each hand (fig. 2).

These digits function independently of each other and can be individually flexed and extended, abducted, and opposed to the other fingers (fig. 3), thus showing a complete and individual set of flexor and extensor tendons and muscles, lumbricales muscles, and also an apparently complete and separate nerve supply to each finger, with a separate cerebral center. Roentgen-ray examination shows the trapezium in each wrist to be slightly enlarged and articulating with two metacarpals. The metacarpals and the phalanges are perfectly formed (fig. 4).

The right foot is normal. On the left foot there is a double great toe. There appears to be a supernumerary toe emanating from the medial side of the great toe, and with a separate nail. There is no subdivision of the great toe, except for a part of the distal phalanx. In this instance syndactylism is present in the first toe of the left foot (fig. 5). The roentgen ray, however, shows a large, short,

thick first metatarsal on the left with two separate phalanges articulating with it. Both the proximal and distal phalanges of the supernumerary toe are normally formed (fig. 6).

Fig. 5.—Normal right foot: bifurcated great toe on left foot.

Fig. 6.—Roentgenographic appearance of feet, showing normal right foot and the two supernumerary phalanges of the left great toe. It is interesting to note the difference in size of the first metatarsals, that on the abnormal foot being much shorter, thicker and heavier than the normal on the right.

Movements of foot and toes are normal except that there is no independent action in the supernumerary toe, as it moves with and is part of the great toe.

Seventeenth and I streets, N.W.

What Is Science?—The progress of science implies not only the accumulation of knowledge, but its organization, its unification, and this involves the periodic invention of new syntheses, coordinating existing knowledge, and of new hypothesis, which give us methods of approaching the unknown. Science is essentially a system, but instead of being, as it was for the schoolmen, a closed system, it is never closed, but always subject to revision or even to complete discard. The true scientist considers his theories not as perfect and permanent, but as essentially incomplete and precarious; he is ever ready to abandon any part or the whole of them, should new experimental facts make it necessary. There are scientific methods; there are no scientific dogmas; there is no scientific orthodoxy.—Sarton, George: Introduction to the History of Science.

IMMOBILIZATION IN PULMONARY TUBERCULOSIS: PRELIMINARY REPORT OF A NEW METHOD

S. C. DAVIS, M.D., TUCSON, ARIZ.

Rest is the established treatment for tuberculosis. The efficacy of immobilization in joint tuberculosis has been proved by the results of the continued use of this line of treatment.

For the past few years the rest cure of pulmonary tuberculosis has consisted of simple rest in bed with different methods of added local rest, such as lying on the affected side, lying on pillows, pneumothorax, phrenicotomy and thoracoplasty.

Phrenicotomy is gaining favor, since it has been proved to be of great help in cases in which the pathologic condition is in the upper portion of the lung, as well as at the base.

I do not suggest that the appliance described in this paper will eliminate all the other methods now in use, but it can be easily seen, after a little study, how many different types of lung condition exist in which it may be used.

In incipient cases, why not begin with local rest as well as bed rest? Until phrenicotomy and pneumothorax become more popular, a simple but effective appliance such as that here described should be used.

In cases in which pneumothorax is impossible or is refused, in which the pathologic changes on the opposite side contraindicate its use, or in which there is involvement on both sides, one side can be given local rest until improved, and then the other side can be treated. This appliance is especially indicated when the disease condition is at or near the base, whether it is tuberculosis, bronchiectasis or nonsurgical abscess.

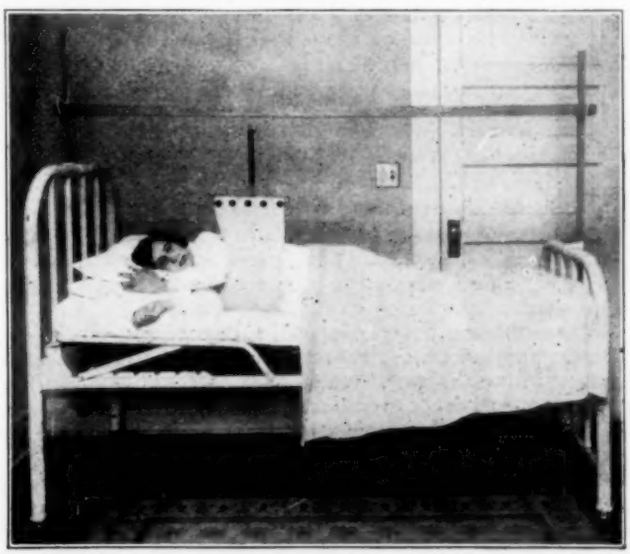
The appliance consists of:

1. Two pieces of lumber, 1 by 2 inches, approximately 5 feet long, fastened to the head and foot of the bed. A cleat is tacked to the lower end to catch on the cross bar and to carry the weight.

2. A 2 by 2 inch overhead fastened to these pieces by strap or rope, which can be raised or lowered.

3. A piece of heavy canvas varying in length according to the size of the patient with five knob eyelets in each end fastened over carriage knobs to a 2 by 2, 12 inches long.

4. A screw hook into the 2 by 2 and another into the 12 inch piece. Connecting these two is number 8 coil spring.



Appliance for immobilization in pulmonary tuberculosis.

5. Extension from spring to overhead piece used for convenience. The tension of this spring should be from 15 to 25 pounds, depending on the size of the patient.

I now have many patients who are enthusiastic about this appliance, and are very cooperative in following out this line of treatment. I hope to be able to give a summary of the results obtained in these cases in the future.

27 South Scott Street.

A CASE OF PARAMAMMARY ADENOFIBROMA *

GEORGE H. SEARCY, M.D., AND GEORGE T. PACK, M.D.,
TUSCALOOSA, ALA.

Aberrant mammary tissue in the neighborhood of the breast may constitute genuine polymastia, or may be sequestrations of the local breast tissue. Ollier [1] was one of the first to realize that tumors may originate in isolated, encapsulated masses of mammary tissue. In fifty instances of recognized paramammary structures reported by Williams,[2] seven contained benign tumors.

Microscopic view of a section of paramammary adenofibroma 1 mm. in diameter; slightly reduced from a drawing with a magnification of 95.

Such tumors are identical in structure and similar in behavior to mammary neoplasms proper.

Deaver and McFarland [3] define paramammary tumors as those "occurring in juxtaposition to the breast and composed of cells representative of the normal mammary tissues, and originating in outlying but otherwise normal lobules of the breast."

REPORT OF CASE

B. R., a colored woman, aged 26, married, presented herself for treatment of a large "lump" under the lower edge of the right breast. The noticeable duration of the lump had been approximately one year. Its growth had been continuous and gradual since its detection. The patient had not suffered any pain or discomfort except that occasioned by the weight of the tumor mass.

There was no history of familial occurrences of similar tumors. She had always been healthy, except for gonorrhea, contracted when she was 19 years of age. She had been married seven years and had never been pregnant. Her weight was 187 pounds (85 Kg.); she was rapidly becoming obese.

The left breast and side were normal; there were no obvious abnormalities of the right breast. The tumor was rounded, lobulated, elastic and apparently encapsulated. It was freely movable and there did not seem to be any attachment to the skin and pectoral fascia. The preoperative diagnosis was lipoma of the subcutaneous tissue. March 10, 1927, the tumor was excised under local anesthesia. There was no continuity of substance with the right breast. Recovery was uneventful. To date (one year later), there has not been any recurrence.

The excised specimen weighed 1,177 Gm. and measured 24 by 14 by 6 centimeters. On cut section it resembled a soft fibroma.

Microscopic examination revealed that the major portion of the tumor was fibrous connective tissue, with glandular areas interspersed throughout its substance. These glandular elements consisted of cystic dilatation of the ducts. The cysts were not macroscopically visible and contained only a serous secretion. A well formed basement membrane demarcated the ducts from the surrounding stroma. The ducts and cysts were lined by one or more rows of cubical epithelium; no epithelial hyperplasia was found. In the ducts of the normal mammary gland there are two layers of epithelial cells, an inner cuboidal and an outer germinative layer. In the cystic spaces of this tumor only the inner cuboidal cells were seen, but in the nondilated ducts an outer flattened layer of cells was inconstantly and irregularly present.

The connective tissue stroma surrounded the ducts in broad bands, but in some areas this periductal stroma was quite cellular with very little fibrous intercellular material.

The diagnosis was paramammary adenofibroma.

* From the Laboratory of Pathology, University of Alabama School of Medicine.

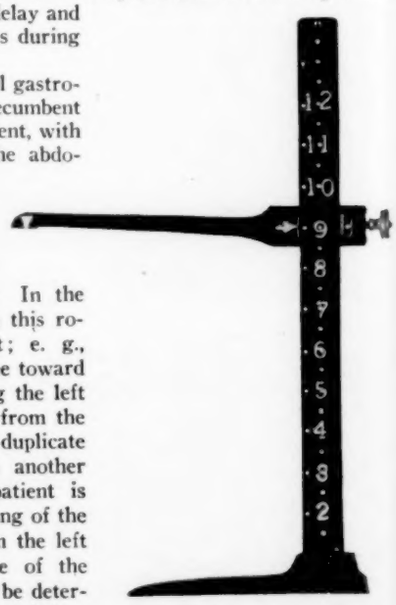
1. Ollier: Gaz. méd. de Lyon, 1855, p. 144, quoted by Deaver and McFarland.
2. Williams: Diseases of the Breast, London, 1894.
3. Deaver, J. B., and McFarland, J.: The Breast, Its Anomalies, Its Diseases and Their Treatment, Philadelphia, P. Blakiston's Son & Co., 1917, p. 459.

RADIO-ANGLE RULE *

ARMISTEAD C. CRUMP, M.D., AND GEORGE M. BLANK, M.D.
NEW YORK

The purpose of the fluorescent slide rule here illustrated is to enable the assistant in the fluoroscopy room to do the measuring more accurately. Its use, of course, is in those fluoroscopy rooms in which films are not taken during the observation of the patient but are taken shortly afterward in another room. Its use is paramount. The practice of taking films in adjacent rooms is caused either by the lack of equipment for taking films on the horizontal or vertical fluoroscopic tables now in use or by the desire of the operator to avoid the additional delay and confusion of taking films during the observation.

In making plates in all gastrointestinal series the recumbent position is most convenient, with the patient lying on the abdomen and rotated a trifle toward one side, or in whatever angle the duodenal bulb is seen most clearly on the screen. In the larger number of cases this rotation is to the right; e. g., drawing up the left knee toward the chest, thus bringing the left hip higher and higher from the level of the table. To duplicate this angle distance in another room to which the patient is transferred for the taking of the films, the distance from the left anterior superior spine of the ilium to the table must be determined, recorded and carried to the technician in the other room. The accomplishing of this measurement without great inconvenience to the patient or to the operator in the dark is almost impossible without the aid of light. The difficulty is now avoided by the use of the fluorescent graduate rule which, after a timely trial, has proved very satisfactory at the Presbyterian Hospital.



Radio-angle rule for use in fluoroscopic measurements.

The rule consists of a heavy metal base, about two or three times the weight of an ordinary carpenter's square, with a still heavier right angle base. The upright portion is equally divided into twenty-four divisions, one-half inch apart, giving

* From the Department of Medicine of Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.

a wide range of 12 inches. The normal average reading is from 4½ o 6½ inches.

The projecting horizontal arm is much lighter than either the base or the upright portions. This arm contains a window overlapping the divided rule, thus making all readings visible. The extreme end of this arm, which is fluorescent, touches the anterior superior spine of the ilium. The ruler end of the projecting arm is adjusted with a small set screw to insure firmness. The whole arm is on a ratchet and slides vertically to the actual height of the spine. The arm contains a fluorescent arrow near the upright portion, pointing through the window to the illuminated number on the rule corresponding to the height of the spine on the table.

All the numerals, division points and arm indicators are mounted and finished in a radium composition, thus making all positions and readings readily visible. This composition is radioactive thorium, a special and highly expensive radium preparation.

In cases in which observation is continued for a long time after the measurement has been made, one may forget the reading. The sliding arm remains sationary at the previous reading and can be referred to until used again. These readings are recorded on the examination sheet the same as any other data, so that they can be used subsequently if necessary.

The advantages of the radio-angle rule over the ordinary rules are numerous; the most important of these are its visibility, simplicity, accuracy and durability.

A RETAINING CLAMP FOR THE REHFUSS TUBE

CHARLES-FRANCIS LONG, M.D., PHILADELPHIA

The problem of anchoring a Rehfuss tube at a certain level for gastric analysis or biliary drainage has always annoyed my patients and myself because adhesive tape is unpleasant on the face. To obviate this discomfort, the clamp shown in the accompanying illustration has been devised.

Clamp for retaining Rehfuss tube.

It consists of a light metal disk in halves, held together by a hinge and a screw clamp. When the tube has been inserted, the clamp is opened and locked around it with the smooth side toward the mouth. The gastric contents can easily pass through the tube with the clamp in place. The bore of the collar is tapered away from the mouth slightly so that further swallowing serves only to strengthen the firm grip of the clamp on the tube.

6430 North Broad Street.

A SIMPLE INSULIN OUTFIT *

NORMAN E. WILLIAMSON, M.D., STOCKTON, CALIF.

Having need of an outfit for a syringe for giving insulin which would be sterile at all times and could be used in traveling, and being unable to obtain the one that has been described by Striker,[1] I devised the arrangement shown, which is much simpler. A rubber tube about two-thirds inch in length is fitted around the barrel of the hypodermic syringe; a wide mouth vial or test tube into which this rubber tube will fit snugly is obtained and filled with isopropyl alcohol. The syringe is put

Sterile insulin syringe.

together ready for use and placed in the outer tube, as shown. The plunger is all the way in before entry into the isopropyl alcohol. The alcohol displaced enters the barrel of the syringe. There is no leakage and the outfit is always sterile. Isopropyl alcohol soon evaporates from the syringe when air is drawn in a few times. We have been using this outfit for about two weeks and the original needle has not rusted at all.

FISSURES OF THE NOSE

RICHARD L. SUTTON, M.D., KANSAS CITY, MO.

Recently I have been impressed by the frequency with which the dermatologist is consulted regarding simple fissures of the anterior nares. The condition must be a comparatively common one, for I have seen twenty-seven cases within a period of less than five years. Practically all (twenty-six) of my patients were women, between the ages of 35 and 55 years. In the majority of instances, only one side of the nose was involved.

The lesions occur at the anterior angle of the opening, and, while scarcely perceptible to the eye of the examiner, are very persistent, and give rise to considerable pain and discomfort. Not infrequently there is a secondary, streptococcic involvement, which may cause slight fever and some intermittent redness of the tip of the organ.

Dryness of the nasal mucosa and rosacea probably are provocative factors, but why the condition is almost wholly limited, at least in my experience, to women of middle age, I do not know.

At various times during the past fifteen years, a number of different plans of treatment have been tried. Stimulating antiseptics, such as iodine and silver nitrate, I have found of little value. Ointments containing ammoniated mercury, or one of the iodides of mercury, are comforting and helpful but seldom prove curative. Occasionally a light radium reaction, such as would follow the brief application of a tiny, unscreened 5 or 10 mm. radium plaque, is followed by the disappearance of the offending lesion.

The most effective agent, however, is a needle-pointed electric cautery. With this modern "microbrenner" the raw surface, previously put on the stretch by means of a nasal speculum, is carefully "ironed" out. Afterward, a dressing of ointment of yellow mercuric oxide (2 per cent) is applied. As a rule, relief is prompt and permanent.

Lesions of this type undoubtedly have long been familiar to rhinologists, and it is very probable that other men have employed the microcautery in their eradication, but if so, I have never learned of it.

The method is so simple, convenient and effective that it is well worthy of wider adoption.

Suite 1034 Rialto Building.

* From the Stockton State Hospital.

1. Striker, Cecil: A Convenient Insulin Outfit, J. A. M. A. **90**: 1536 (May 12) 1928.

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SATURDAY, AUGUST 25, 1928

THE PHYSIOLOGIC EFFECTS OF X-RAYS

Little more than a quarter of a century has elapsed since Roentgen's announcement, in 1895, of a new type of radiation that promptly acquired the designation of x-rays. The discovery rapidly found applications of great usefulness in the fields of both diagnosis and therapy. Presently, however, untoward incidents began to give a warning that the new physical agency involved effects of unanticipated potency that called for conservative application, or at least greater circumspection than was at first deemed essential. The distinctions between the so-called soft and hard rays needed to be recognized, for the wavelength determines, in a way, the gradient of penetration and absorption established, and on these the more remote physiologic effects in turn depend.

Persons who do not themselves deal directly with the use of x-rays scarcely realize that the standardization of a "unit dosage" of this agency has not yet been worked out in an entirely satisfactory manner. There are, of course, physical measurements in terms of which the manifestations may be expressed, but they still need to be translated into physiologic values. As most rational therapy with x-rays is limited by the tolerance of the skin, the "erythema dose" has become a desideratum. A recent reviewer[1] points out that, in addition to the physical variables in the consideration of a skin unit dose, there is a marked physiologic variation which is of great importance to the therapeutist, though probably of less importance to the experimenter. In human beings the amount of radiation necessary to produce just a mild erythema of the skin at from six to eighteen days after exposure seems to depend on the amount of pigment present and the relative thickness of the skin. These facts help to indicate why the biologic unit of radiation has been difficult to establish, because of the lack of suitable measuring devices, the use of varying wavelengths of radiation and the natural variation in the reaction of the biologic material used.

The importance and timeliness of more intensive investigation of standardized measuring devices, of biologic units of dosage for various purposes, and of the performance of different agencies for irradiation has also been stressed by Warren of the University of Rochester. Certain established facts stand out: Irradiation of the body tissues causes injury to cell structures and life processes, though the amount of injury produced is proportional to the amount of radiation administered at a particular wavelength and varies with the tissue irradiated and, to a certain extent, with the species studied. Moderate cell injury may be manifested by atypical cell division and development, with partial disturbance in function and organ structure. Pronounced cell injury is followed by cell disintegration with, of course, profound disturbance in function and in structure. The disintegration of cells after pronounced injury by irradiation seems to be responsible for the intoxication present and for the changes found in the chemical constituents of the urine and the circulating blood. The proof for a general stimulating effect of irradiation with x-rays is lacking at present. In evaluating the extent of the change brought about, Warren recalls that there is a latent period represented by the length of time necessary for the succeeding generation of cells to replace those present at the time of irradiation or the time necessary for the injured cell to disintegrate. These two factors may be acting at the same time, so that disturbance in function or structure may depend on whichever factor predominates and the extent of the cell injury. One dictum is worthy of repeated emphasis: If sufficient radiation is given to any particular cell type, the latter will be injured; and the effect on the organism as a whole will depend on the function of that cell type and the number of cells injured.

1. Warren, S. L.: The Physiological Effects of Roentgen Radiation upon Normal Body Tissues, Physiol. Rev. **8**: 92 (Jan.) 1928.

THE SEAT OF THE EMOTIONS

A recent writer[1] has interpreted the mind as an expression of activity of the brain to the same degree that digestion is the function of the alimentary tract and that embryo and infant are the product of the reproductive organs. In other words, the mind is not something separate from the body but is a function of one of its organs. The brain, he adds, "secretes" the mind no less than the glands of the mouth secrete saliva and the kidneys secrete urine. The mind is as dependent on the integrity of the anatomic structure and the normal physiologic functioning of the brain as the circulation of the blood is on the normality of the heart, its valves, and rhythmic action. Thus normal cerebral activity, consisting in the transmission of nerve impulses this way and that among the centers, is the process underlying the mind, or intelligence. Disturbances of the mind, Haggard concludes, are to be

1. Haggard, H. W.: The Science of Health and Disease, New York, Harper & Brothers, 1927.

regarded as the psychic and behavioristic aspects and expressions of abnormal cerebral functioning.

From this standpoint it becomes logical to seek to locate the seat of psychic processes in definite parts of the nervous system. The association of impressions that constitute thought, memory, imagination and the process of willing acts has been referred to the cerebral hemispheres for its morphologic background. The emotions, which play a large part in human life, are not merely reflected in consciousness but also lead to physiologic phenomena of varied sorts. What is the seat of the emotions? Are they likewise to be relegated to the cortical areas of the brain? Bard [2] has aptly commented that while it is reasonable to suppose that the neural processes underlying emotional consciousness are indeed cortical, it does not follow that the bodily changes which make up emotional behavior are due to a nervous discharge of cortical origin.

It has been established that, in certain mammals deprived of their cerebral hemispheres, symptoms resembling anger and rage may still be elicited by appropriate stimuli. Interest in the responses provoked by emotions is no longer restricted to a few external reactions involving obvious changes of posture and expression. We know today, particularly as the result of Cannon's interpretations,[3] that emotional excitement is attended by marked visceral changes. Thus, in fear and rage the viscera are dominated by a discharge of impulses over the sympathetic division of the autonomic nervous system. The arterial pressure and the sweat glands may become affected. Indications of augmented secretion of the suprarenal medulla appear. The viscosity of the blood is altered. So-called emotional glycosuria may be encountered.

Working in the physiologic laboratories of the Harvard Medical School, Bard has attempted to ascertain the locus of the subcortical level of the nervous system where the emotional activities of decorticate animals are generated. In other words, the central source of characteristic sympathetic discharges has been sought in the study of the neural basis for emotional expression. The method used was that of ablation of varying portions of the brain stem in the cat after removal of the hemispheres. In acute experiments it was found that typical sham rage regularly developed even after the removal of all parts of the brain cranial to the middle of the diencephalon, and after removal of the dorsal part of the thalamus. It invariably failed to appear after sections which separated the ventral and most caudal fractions of the lower half of the diencephalon from the midbrain. This leads to the conclusion that the expression of anger in the cat is dependent on central mechanisms which are located in this part of the brain stem. Bard points out that the behavior attending the major emotions fear and rage is called forth by the urgency of certain definite circumstances and it is plainly directed toward the preservation of the individual. It constitutes, as he states, a reaction that is primitive, energetically purposive and common to the divergent members of the vertebrate series. From an evolutionary standpoint it is significant that the reaction is dependent, as Bard has found, on the older divisions of the nervous system.

2. Bard, P.: A Diencephalic Mechanism for the Expression of Rage, with Special Reference to the Sympathetic Nervous System, Am. J. Physiol. **84**: 490 (April) 1928.
3. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, New York, 1919; Am. J. Physiol. **50**: 399, 1915.

NEW REGULATIONS FOR LIQUOR PRESCRIPTIONS

Probably with the idea of obtaining more effective control over the prescribing and dispensing of medicinal liquor, the Commissioner of Prohibition has promulgated new regulations, effective August 16. Under these regulations the physician must make four copies of each prescription, two originals and two carbons, instead of two copies as he was required to do under the old regulations. Both original copies are given to the patient. Both carbon copies are retained by the prescribing physician. The patient gives both original copies to the pharmacist. The pharmacist cancels both copies of each prescription when he fills it, and some time each month sends to the local prohibition administrator one copy of each prescription filled during the preceding month. The physician, within the first ten days of each calendar month, must send to the local prohibition administrator one of the retained carbon copies of each prescription issued by him the preceding month. Thus each prohibition administrator, if a prescription has been issued and filled within his district, will have in his office an original and a carbon copy of it, in from one day to two months after its issue.

The new regulations relieve pharmacists of much burdensome record keeping, by making the copies of the prescriptions that they are required to keep and the copies that they are required to file monthly with prohibition administrators the only required record of the transactions. The regulations add materially, however, to the labor of physicians, requiring that they write four prescriptions instead of two, that they make monthly reports to the Commissioner of Internal Revenue, instead of reporting only when their books of prescription blanks have been exhausted or when specially directed to report by the commissioner, and that they keep copies of all prescriptions issued, in addition to keeping an elaborate book record of all such prescriptions. The regulations do assume to relieve the physician of the statutory duty of returning to the Commissioner of Prohibition the book of stubs of used prescriptions. This concession, however, is of no importance, for the formula that the commissioner will ultimately lay down, with which physicians will have to comply in order to obtain new prescription blanks, will presumably be no less elaborate than the formula now prescribed.

Presuming that physicians will make their monthly returns to prohibition administrators by registered mail with requests for return receipts, as they must do for their own protection, the annual outlay by the medical profession for postage and registry fees alone under the new regulations will amount to approximately $180,000 a year. If to this is added the cost of stationery and of labor, it seems likely that the new regulations will increase the expenses of the medical profession by as much as a quarter of a million dollars annually. In the ordinary course of business it may be expected that this item of cost will enter into the general cost of medical practice and be passed along to the sick.

Current Comment

MEDICOLEGAL INSTITUTES

In the *Lancet*, July 28, an editorial [1] deals with the need for a medicolegal institute in London. It is stated that London is one of the few of the considerable towns in the world without a medicolegal institute. Apparently it was not known to the writer that in the United States there is not yet a single establishment that corresponds to a fully equipped and organized medicolegal institute like those discussed in the ninth series of Methods and Problems of Medical Education, issued lately by the Rockefeller Foundation, which contains descriptions and accounts of the work of twenty-four medicolegal institutes, mostly European. These institutes for the most part are departments of universities and are housed and organized much in the same way as departments of anatomy or physiology. Naturally the functions of medicolegal institutes will vary somewhat in different places, but their main business is to study medicolegal problems by scientific methods and in all cases the problems will relate in greater or less degree to deaths from unknown or violent means and to diverse aspects of crime against the person. This kind of work, the social value of which does not need particular emphasis, demands special study and training if it is to be done properly. It concerns a special field of medical science and, like all other special fields, requires steady devotion if society is to reap the full benefit of accumulated knowledge and experience and new progress is to be made. As pointed out in the *Lancet*, to call in the nearest physician or pathologist, even if trained well in an ordinary way, may not be, and usually is not, enough to elucidate properly delicate medicolegal problems. For this important purpose there plainly are needed permanent institutions, manned by trained specialists, in which routine medicolegal examination can be made in the proper way at the same time as investigative and experimental work is carried on to meet unsolved problems and new situations. Crime is progressive; it provides itself with new weapons and means; and hence those who are charged with protecting the community must see to it that their knowledge and skill expand accordingly. This requires the scientific point of view and laboratory facilities. In our country altogether too many medicolegal necropsies are entrusted to physicians who are not competent for that kind of work. Practical politics, as shown by the condition in many of our large cities, is not providing the proper facilities for progressive modern medicolegal service. Just as in London, there are needed in our larger cities suitable establishments in which medicolegal work can be carried on properly at all times. In addition to postmortem examinations this work includes toxicological, serologic and other forms of investigation requiring expert knowledge. In several places the conditions for making such an establishment at the same time a part of a university would seem to be favorable. This is particularly true of cities in which are located state universities that maintain medical schools. And in New York and Boston, where the system of medical examiner has replaced the coroner and where fairly satisfactory standards of official medicolegal work obtain, the conditions demand increased municipal support in the form of proper housing and equipment. In speaking of medicolegal institutes, it should be noted that there is nothing magical or mystical about the word "institute," which simply means a suitable place for the work in question manned by competent persons who are left in peace to carry on their appointed tasks. As physicians, we have been slow to interest ourselves actively in improving our medicolegal service. Probably the most significant advance in this field so far in the United States is the change from the cumbersome and archaic system of coroner to the much more effective system of medical examiner, which has been made in Massachusetts, New York and New Jersey, and which should be introduced as rapidly as possible in other states.

1. A Medico-Legal Institute for London, Lancet **2**: 173 (July 28) 1928.

IGNORANCE CONCERNING ALCOHOLISM

Economists, sociologists and physicians alike seem unable to evaluate the success of the present law relating to the consumption of alcoholic beverages. While some seem inclined more in its favor [1] and others rather against it,[2] statisticians are in general agreed that reliable criteria are not available. One cannot read the recent discussion of a group of eminent British psychiatrists [3] on the etiology of alcoholism without realizing that the very nature of this social and personal disease is yet to be determined. Can the craving precede indulgence or does it arise therefrom? *Alteri altera dixunt.* One suggests that alcohol results in the production in the system of chemical compounds which produce a form of distress that only more alcohol can relieve. Another authority, equally reputable, scoffs at this idea and declares that he has never been able to satisfy himself of the value of treatment by alcohol of the early stages of delirium tremens. Another asserts that men do not drink until after they have made the discovery of the euphoria that results from this experience. But it is not by any means agreed that a desire

1. Emerson, Haven: Has Prohibition Promoted Public Health? Am. J. Pub. Health **17**: 1230 (Dec.) 1927.
2. Dublin, L. I.: Has Prohibition Improved the Public Health? Am. J. Pub. Health **18**: 1 (Jan.) 1928; Health and Wealth, New York, Harper and Brothers, 1928, pp. 288-309.
3. Proc. Roy. Soc. Med. Sec. Psychiatry **21**: 35-54 (June) 1928.

for positive pleasure is the stimulus that urges to drink. The more orthodox view, as expounded some years ago by a committee of the Medical Research Council,[4] is that "the direct effect of alcohol upon the nervous system is, in all stages and upon all parts of the system, to depress or suspend its functions; that it is, in short, from first to last, a narcotic drug." That the orthodox view has some distinguished opponents only serves again to illustrate the lack of certain knowledge. And the practical side of this question, whether men drink to achieve pleasure, to escape pain or from both motives, is one whose importance neither the sociologist nor the physician can afford to ignore. It may be that, somewhat analogous to Henry James' moral equivalents of war, there are moral equivalents of intemperance. There is evidence that war itself is an equivalent of alcoholism, though scarcely a moral one, for during the two war years of 1917 and 1918, as also during the Civil War, the death rate from alcoholism was greatly reduced and the reduction was relatively greater in the age groups both of men and of women most closely affected by the upheaval.[5] Certainly one cannot explain the relatively high incidence of alcoholism in the United States on the theory that chronic drunkenness is invariably the consequence of a desire to escape misery. The conviction is inescapable that these unsolved problems are not all insoluble. They constitute a challenge to research.

THE INTERPRETATION OF DECREASING MORTALITY RATES

During the last twenty-five years, mortality rates generally throughout the United States have had a downward trend. Different agencies have assisted in bringing about this fortunate situation. Vital statistics are susceptible to many influences, and their interpretation is hazardous to the untrained. A recent piece of mimeographed publicity matter begins: "'A preliminary report on five years of work in the $2,000,000 health demonstrations of the Milbank Memorial Fund, made public yesterday, disclosed a reduction during the half decade of approximately one third in the tuberculosis death rate and of nearly one fifth in the infant mortality of one of the three demonstrations. Similar reductions applied to the country generally would mean a saving of upwards of 13,000 lives annually,' remarked John A. Kingsbury, secretary of the fund, in giving out the report." It is also stated that the 1927 death rate from tuberculosis in Syracuse was the lowest the city ever had, and that as a result of an intensive campaign the mortality rate from measles in that city among children under 3 years of age was 69 per cent lower during the 1926-1927 epidemic than in the immediately preceding one. These, with other statements, give the impression that the demonstrations conducted in New York by the Milbank Fund brought about the improvement noted in the mortality rates. In the same mail was a review of health conditions in the state of Illinois in the last seven years. The tuberculosis death rate in Illinois and the infant mortality rate have decreased about 25 per cent since 1920. The mortality rates of other diseases have decreased also, and it is claimed that no other state with a 1920 population of four million or more has reported an average annual death rate so favorable. Yet there was no health demonstration by the Milbank Memorial Fund! Eminent statisticians shake their heads sadly over the statistical claims and interpretations of such propaganda. Where are the allowances for changing economic situations, for general trends, and for all of the other factors that should be considered? The report of so short a period cannot be taken as conclusive evidence of the beneficial effects of any one agency operating in the health field.

4. Alcohol: Its Action on the Human Organism, H. M. Stationery Office, 1923.
5. Earp, J. R.: War Law and Alcoholism, Survey Graphic 9: 581 (Sept.) 1926.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Another Health Center.—The new $100,000 health center at Santa Monica was opened, August 7. It is a cooperative project of the county and city, and is the fourth in a series established in the county, the others being at Pomona, San Fernando and Compton. It provides an emergency hospital, a laboratory, clinics and offices. The county provided the construction and equipment and the city donated the site.

The San Joaquin Health District.—Eight years ago, San Joaquin County maintained a health department which operated in the rural areas, and the cities of Stockton, Lodi, Tracy and Manteca had separate health departments. In all, in 1920, sixteen persons were employed and about $71,000 was spent, but the county still had outbreaks of smallpox, diphtheria and typhoid. There was a lack of system. The county board of supervisors, with the cooperation of business groups, sought a method of consolidation of the health departments to make for efficiency, and the San Joaquin Local Health District was formed. Its board of trustees, representative of each incorporated community and the rural area, provides a centralized group of workers and equal health protection to both the urban and rural areas. Despite the employment of more persons than formerly, the cost of the service has not increased proportionately with the increase in population or the assessed valuations, and the public health work has been more efficient, if rates reported may be considered a criterion. The typhoid death rate dropped from 16.2 per hundred thousand in 1922 to 2.9 in 1927; the tuberculosis death rate from 191.5 to 139.8; the diphtheria death rate from 19.5 to 2.9; the maternal death rate from 20.6 per thousand living births to 6.7, and the infant death rate from 73.7 per thousand living births to 61.7. The Stockton State Hospital population and deaths are excluded from these figures. The district maintains a laboratory which serves physicians and their patients, and keeps watch over the water, food and milk supplies; a public health nursing service; a division of children's dentistry, and a district health center, and coordinates its health work with social relief, the juvenile court, the general hospital, children's home, day nurseries and other social agencies.

GEORGIA

Society News.—Among the speakers at the annual meeting of the Eighth District Medical Association, August 8, Atlanta, were Drs. Cyrus K. Sharp, Arlington, president of the state medical association; Joseph E. Johnson, Elberton, president of the Eighth District Medical Association; Joel L. Porter, Rutledge, past president of the Morgan County Medical Society; Allen H. Bunce, Atlanta, on "Treatment of Tuberculosis"; Arthur G. Fort, Atlanta, "Zinc Ionization in Chronic Purulent Otitis Media"; John A. Hunnicutt, Athens, "Chorea, a Dangerous Complication of Pregnancy: Report of a Case Treated with Cesarean Section"; Dr. Henry W. Birdsong, Athens, "Urethral Stricture"; Stewart D. Brown, Royston, "Peptic Ulcer," and Stewart R. Roberts, Atlanta.——Dr. Daniel C. Elkin addresed the Fulton County Medical Society, Atlanta, August 16, on "Pneumococcic Peritonitis."——The Fifth Dis-

trict Medical Society held its annual meeting at Decatur, August 3, and was addressed among others by the president of the state medical society, Drs. Cyrus K. Sharp, Arlington, Shelley C. Davis, Atlanta, John Rufus Evans, county health officer, and George M. Niles, Atlanta. Dr. Arthur G. Fort, Atlanta, was elected president for the ensuing year. The next annual meeting will be at Fairburn.

ILLINOIS

Illinois Claims Average Annual Death Record.—No other state with a 1920 population of four million or more has reported an average annual death rate as low as that in Illinois during the last seven years, according to the Illinois State Department of Health. The average annual death rate in Illinois from 1921 to 1927 inclusive was 11.4; of Ohio, 11.5; of Michigan, 11.7; of Massachusetts and Pennsylvania, each 12.4; of New York, 12.8, and of California, 13.8.

Society News.—Drs. Frank P. Norbury and Carl E. Black, Jacksonville, addressed the Christian County Medical Society, Taylorville, July 19, on "Early Signs and Symptoms of Mental Disorders" and "Evolution in Diagnostic Methods," respectively. ——The Schuyler County Medical Society invited the Adams County society to meet with them at Rushville, August 23, when, following an afternoon of golf, there was a dinner and a scientific program. —— The cost of "Cancer Day" in Quincy, May 7, held under the auspices of the Adams County Medical Society, was $440, all of which was contributed by physicians, except a contribution of $75 by the city health department. The three largest items of expense were advertising in the local paper, rental for the theater, and printing. ——Dr. Ira W. Ellis, Murphysboro, was the guest of honor at a testimonial dinner given by the local physicians, August 8; Dr. Ellis has been in practice about forty-five years, thirty-nine of which have been spent in Murphysboro.

Chicago

Committee Considers Status of Tuberculosis Vaccination.—At a meeting, August 2, a committee considered the present status of work on vaccination against tuberculosis with the Bacillus Calmette-Guérin, and especially the application of this method of vaccination to the general public by the Chicago Municipal Tuberculosis Sanitarium, where this organism has been studied by animal experimentation for about one year. The committee comprised Drs. Ludvig Hektoen, professor and head of the department of pathology, Rush Medical College; David J. Davis, dean of the University of Illinois School of Medicine; Julius H. Hess, professor of pediatrics, University of Illinois School of Medicine; Henry C. Sweany, medical director, Municipal Tuberculosis Sanitarium; Elsa Lagergren, of the Göteborg (Sweden) Children's Tuberculosis Hospital, temporarily on duty at the Chicago Municipal Tuberculosis Sanitarium, and Benjamin Goldberg, secretary, board of directors of the sanitarium. The conclusions of the committee were to the effect that the Bacillus Calmette-Guérin does not tend to stability as far as its virulence is concerned, some strains becoming virulent to the extent that animals inoculated die as a result of the inoculation, and that results reported thus far from the use of oral inoculations with this organism do not seem to be conclusive evidence that protection can be secured. The committee was of the opinion that the method must be regarded as in the experimental stage, and therefore not suitable at this time for widespread application to human beings, either through oral administration or into the tissues directly. It seems proper, the committee reports, since years are required to determine the value of a process of this type, to await the results of the use of this vaccine in other communities where it has been on trial a number of years, and to continue at the Chicago Municipal Tuberculosis Sanitarium only animal experimentation and carefully supervised limited human inoculations.

Chicago's New Sewerage Works.—The plan of diverting sewage from Chicago by dilution through the Chicago River and the drainage canals, for which purpose the Chicago Sanitary District was organized, was long ago realized insufficient to handle this great sewerage problem. The Sanitary District is now constructing sewage treatment works. After a testing station had been built, a plan was outlined comprising five major construction projects and a number of minor projects. Of the major projects, the Des Plaines River activated sludge plant with provision for filter pressing and drying the sludge and the Calumet sewage treatment works went into service in 1922. The latter is primarily an Imhoff tank plant, but two of the tanks have been equipped as activated sludge units, and a small trickling filter is operated for experimental purposes. The new North Side sewage treatment works, which will be in operation by the time of the American Public Health Association meeting, October 15-19, is said to be the largest activated sludge plant in the world. The sewage is pumped up 48 feet into grit chambers and then passes through inch screens to preliminary settling tanks where the coarser solids are removed, then through the main meters to three batteries of aeration tanks, and thence to the settling basins. The effluent goes into the North Shore channel of the sanitary district. The excess sludge is pumped through an 18 mile main to the West Side works for digestion. The West Side works, the largest Imhoff tank plant in the world, will be nearly completed in its first unit by the time of the annual meeting. Sludge drying beds on a large scale are to be provided here, and a railroad to remove the sludge for dumping on about 900 acres reserved for that purpose. The Southwest plant, a major project, has not yet been planned. A system of intercepting sewers to bring the sewage to the various works is under construction and the North Side and the Calumet intercepting sewers are practically complete. Sewage treatment in this community is being extended on a vast scale. Ultimately about $155,000,000 will be invested in sewage treatment.

IOWA

Personal.—The following members of the staff of the Iowa State College, Ames, will leave in August, it is reported: Dr. Jeannette Jongewaard, to practice in Kansas City; Dr. Harry R. McPhee, to Princeton University in the physical education department, and Dr. Erwin W. Johns, to Colorado to practice.

Society News.—Among the speakers at the annual clinic of the Upper Des Moines Medical Society, Lake Okoboji, August 16, were Drs. Henry S. Houghton, dean of the State University of Iowa College of Medicine, Iowa City; Andrew B. Rivers, Rochester, Minn.; William W. Bowen, Fort Dodge; Harry A. Miller, Fairmont, Minn.; Charles F. Starr, Mason City; Daniel C. Steelsmith, Des Moines, and Thomas U. McManus, Waterloo.

MARYLAND

Society News. — The One Hundred and Fourth medical regiment, Maryland National Guard, recently went into camp at Carlisle Barracks with a roster of about 375 enlisted men and twenty-five officers.——Dr. Hugh H. Young, Baltimore, was admitted to honorary fellowship in the Royal College of Surgeons of Ireland at a ceremony in Dublin, August 1.

Decrease in Death Rate.—During 1927, the death rate for Maryland was 1,321 per hundred thousand of population as compared with 1,434 in 1926. The decrease was largely accounted for by decreases in death rates from pneumonia, measles, tuberculosis, influenza, cancer, nephritis and diarrhea and enteritis. There were increases in 1927 in the death rates from rheumatism, appendicitis and suicide.

Physically Perfect Children.—As a preparation for entering school, the child health conferences that have been held this summer throughout Maryland under the auspices of the state department of health have encouraged parents to have their preschool children examined as to their weight, posture, teeth, throat, vision and hearing. Few in a total of 2,100 children examined made a perfect score; 1,825 of them were in need of some special care; the teeth of 1,188 needed attention; 859 had enlarged or infected tonsils; 305 had adenoids, and 161 were mouth breathers; unfavorable heart conditions were found in sixty-four, and thirty-seven had defective vision. Only about thirteen in every hundred children were in the 100 per cent healthy class.

NEW YORK

Society News.—A prevention-of-blindness department with headquarters in New York has been opened by the New York State Commission for the Blind. All cases of eye difficulties brought to the department's attention will be followed up; three full-time nurses and a consulting committee of eye specialists will help in this work.

New York City

Dr. Wynne Succeeds Dr. Harris as Health Commissioner.—Dr. Shirley W. Wynne was appointed city health commissioner, August 17, to succeed Dr. Louis I. Harris, who resigned to become consultant to the National Dairy Products Corporation, 120 Broadway. Dr. Wynne is 45 years of age and has been in the city health service almost twenty-one years, serving as medical inspector, assistant registrar, assistant, director of hospitals, and recently deputy health commissioner. He is a graduate of Columbia University College of Physicians and Surgeons, and was on the list of persons recom-

mended for commissioner of health by the New York Academy of Medicine at the time the mayor appointed Dr. Harris.

Report on Life Extension Institute.—The Medical Society of the County of New York, May 28, accepted the report of its committee on civic policy in regard to the Life Extension Institute. The conclusions of the committee were:

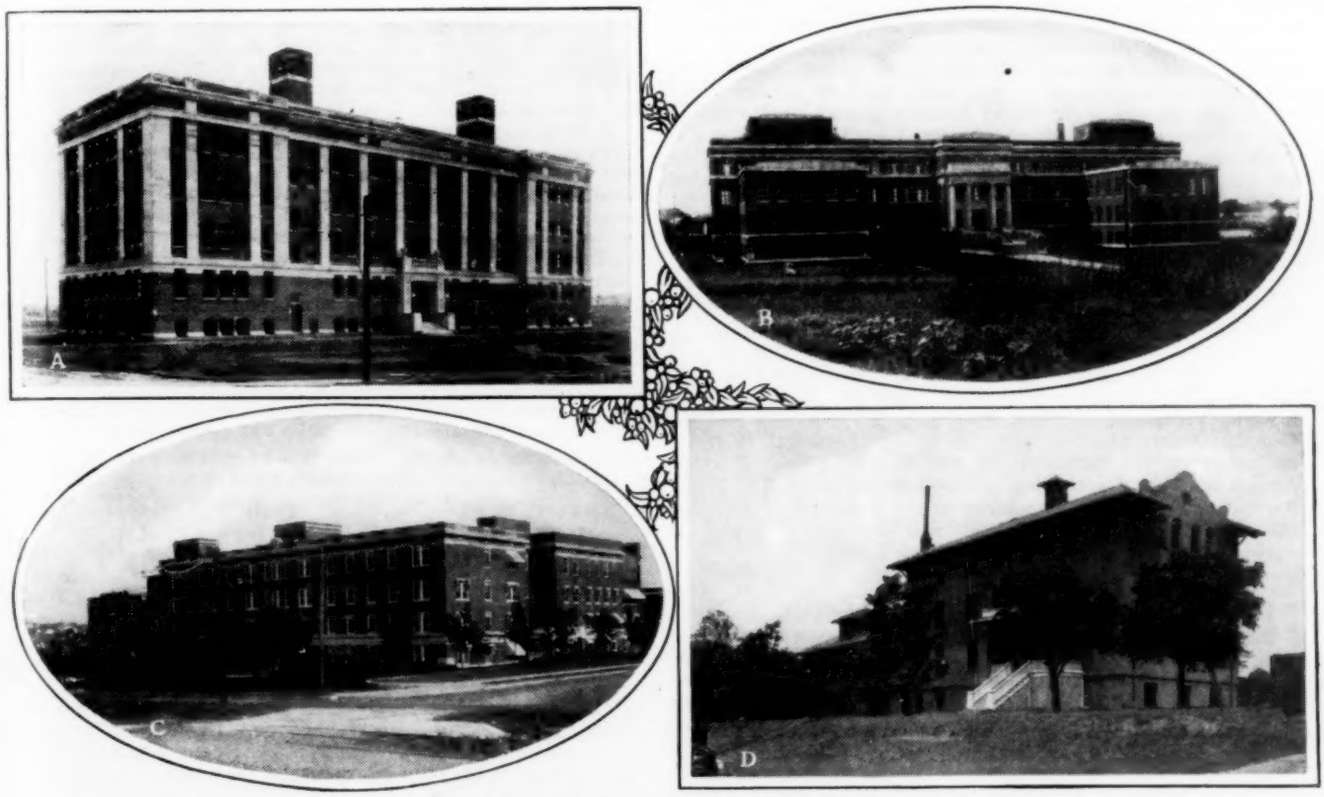
1. It is evident that the Life Extension Institute continues to advertise in the public press.
2. It gives health examinations which are made by physicians employed by them.
3. The physicians in the employ of the Life Extension Institute advise patients as to diet, exercise, posture, etc., but in each instance such advice is given in written form and addressed "Dear Doctor," the client being referred to his family physician or advised to obtain one.
4. The physicians of the Life Extension Institute do not prescribe for their clients.
5. The Counsel of the County Medical Society advises the Committee that in his judgment the Life Extension Institute is not practicing medicine illegally and that there is no ground for action.
6. The Counsel further states that if he were advised that the Life Extension Institute was practicing medicine in violation of the State Medical Practice Act, he would recommend that the county society bring action against the Institute.

This reinvestigation confirms the results of an investigation made by the Counsel of the Society several years ago.

OKLAHOMA

Increase in Mental Patients.—The number of first admissions to the Oklahoma Institute for the Feebleminded during 1927 was sixty-three as compared to fifty-four first admissions in 1922, according to a census made by the U. S. Department of Commerce with the cooperation of the state hospital. The increase in the first admissions in Oklahoma between 1922 and 1927 was relatively greater than the growth in the state's population. The first admissions in 1927 amounted to 2.6 per hundred thousand of population as compared with 2.5 in 1922. The total number of patients in the Oklahoma Institute for Feebleminded was 549 on Jan. 1, 1928, as compared with 303 on Jan. 1, 1922, and this increase was much greater relatively than the increase in the population of the state during this period. There were 244 males in the institution, Jan. 1, 1928, and 305 females.

Medical School United at Oklahoma City.—With the completion of the new medical school building at Phillips Avenue and Thirteenth Street, Oklahoma City, the University of Oklahoma School of Medicine becomes united in that city; formerly, two years of the course of instruction were given at the city of Norman. The equipment has been transferred to the new building, and for the first time the entire four years' work will be given at Oklahoma City when school opens, September 17, with an enrolment of about 250 students. The premedical work will continue to be given at Norman, where other departments of the state university are located. Pictures of the medical buildings have been received through the courtesy of the dean, Dr. LeRoy Long. Building *A* is the new medical school; *B* is the Children's Hospital; *C* is the University Hospital, and *D* is the outpatient clinic. All these buildings are on the campus except the last named, which is about thirteen blocks off the campus. The two hospitals have a combined capacity of more than 400 patients. The outpatient clinic treats about 135 patients a day.



University of Oklahoma School of Medicine

Special Meeting of Infantile Paralysis Committee.—At a special meeting of the infantile paralysis committee of the New York Academy of Medicine, August 15, Dr. Linsly R. Williams, director of the academy, stated that the object of the committee was to study the best method of treating children acutely ill with infantile paralysis with convalescent serum. The disease had not then assumed epidemic proportions, although fifty cases were reported in the city in July and less than a hundred cases to date in August. Dr. Simon Flexner stated that favorable results were frequently obtained when the serum was injected before the onset of paralysis, that the academy had received a limited amount of money to try out the convalescent serum treatment, that the supply of serum was very limited, and that it is not practicable now therefore to use the serum as a preventive in families in which a case has already developed. It is necessary to charge $25 (less than the actual cost of the serum) for a treatment. The committee has authorized about twenty physicians in the different boroughs to use the serum, each of whom has a dose of serum available, whose names are on file in the health department and at the academy. They work in full accord with the health department but should not be confused with the diagnostic staff of the health department. Information will be given to any one at the academy, or at night at the laboratory of the health department at the foot of Sixteenth Street.

PENNSYLVANIA

Beaver County Establishes Milk Control District.—A milk control district has been created in Beaver County, and the county commissioners have appropriated $7,000 to cover the board's expenses for two years. The district was established after a two months' survey conducted by the state department of health working with the county medical director, Dr. John A. Stevens, Woodlawn.

Personal.—Howard D. Lightbody, associate professor of physiologic chemistry, Michigan State College, East Lansing, Mich., has been appointed director of the John C. Oliver Memorial Research Foundation, recently established at the laboratory of the St. Margaret Memorial Hospital, Pittsburgh. ——Dr. William H. Schmidt, Philadelphia, addressed the Bucks County Medical Society, Quakertown, June 13, on "Treatment of Cancer."——Dr. Solis C. B. Hertzog has resigned as medical director of the Berks County Tuberculosis Sanatorium, Reading, to engage in private practice.

Philadelphia

Publicity in Diphtheria Campaign. — Philadelphia is attempting to rid itself of diphtheria within the next few years, and one of the first steps has been completed by an immunization campaign among the school children. When the director of health called a conference to organize the campaign, a publicity expert was consulted. A moving picture was made of exercises at which the mayor read a proclamation for the eradication of diphtheria, and this was shown throughout the city; one thousand red and blue posters were placed in the elevated and subway stations; 500,000 circulars were distributed by school children, visiting nurses and agents of life insurance companies; the rapid transit company displayed a poster on the ceiling of all its cars; the newspapers published editorials, news articles and advertisements; radio stations announced the campaign; posters were placed in the schools. All publicity stressed the object of the campaign, how immunization was done, where to go and when and that it was free of cost to the patients. At the end of the third week of the campaign, 24,400 children had had their first inoculation.

SOUTH DAKOTA

Society News.—At the July 17 meeting of the Aberdeen District Medical Society, Aberdeen, Dr. George R. Albertson, Vermilion, dean of the University of South Dakota College of Medicine, spoke on "Fundamentals of Medical Education"; Dr. Charles N. Spratt, Minneapolis, on "Application of General Surgical Principles to the Eye," and Dr. Joseph C. Ohlmacher, Vermilion, on "The State Health Laboratory and the General Practitioner."——Dr. Percy D. Peabody, Webster, has been elected president of the South Dakota Hospital Association for the ensuing year.——Dr. Charles H. Mayo, Rochester, Minn., gave the address at the dedication of Spafford Hall of the Northern Normal and Industrial School in Abderdeen.

TEXAS

Health at San Antonio.—Telegraphic reports to the U. S. Department of Commerce from seventy cities with a total population of about thirty-one million indicate that, for the week ending August 11, the highest mortality rate (18.7) was for San Antonio, and that the mortality rate for the group of cities as a whole was 11.7. The mortality rate for San Antonio for the corresponding week last year was 14.1, and for the group of cities, 10.4.

Texas Leads in Establishment of Child Health Centers.—Texas led the country in the number of permanent child health centers established during the fiscal year 1927, according to a report of the Children's Bureau noted in the *United States Daily*. Fifty-four new stations were established in Texas as a result of maternity and infancy work. Physicians conducted 357 child health conferences, attended by 3,200 infants and preschool children, and seventeen prenatal conferences which 166 prospective mothers visited. Nurses apparently conducted 643 conferences at which 3,361 infants and preschool children were inspected and ninety-two prospective mothers were instructed. Nurses also made 11,400 visits to homes to give instruction in maternal and child care. The report of the administration of the Maternity and Infancy Act by the U. S. Children's Bureau lists 800 other demonstrations on maternal, infant and child care before groups, 142 junior health clubs conducted by nurses in which 3,200 children were enrolled, and forty-one classes in which 500 midwives enrolled. It is estimated that the work of the Texas Bureau of Child Hygiene reached more than 48,700 infants under 1 year of age, 8,000 preschool children, and nearly 5,800 prospective mothers during the year. The regular staff of the bureau was assisted by the volunteer services of 113 physicians and 118 dentists.

Auditorium Presented to Dallas County Society.—At the dedication of the new million dollar addition to the Medical Arts Building, Pacific Avenue and St. Paul Street, Dallas, July 24, an auditorium seating 300 was presented to the Dallas County medical and dental societies for use as their home by Dr. and Mrs. Edward H. Cary, who own the building. The ceremony was interspersed between sessions of a two day clinic which marked the opening of the addition, and physicians from a number of cities were in attendance; Dr. Alfred I. Folsom presided; the speakers were Dr. Cary, Dr. James S. Calhoun, president of the Dallas County Medical Society, and Alvin C. Sloan, D.D.S., president of the Dallas County Dental Society. The auditorium has provisions for a library, and the ambition of the medical society is to provide the equipment, possibly this year. The history of this undertaking goes back to 1923, when the county medical society appointed a committee, under the chairmanship of Dr. Charles M. Rosser, to investigate the feasibility and recommend a plan to finance a building for the use of physicians and the allied professions. The medical arts building was erected, the society and its members supported the undertaking, and it has been a success, as the dedication of the new addition indicates. Dr. and Mrs. Cary, in large part, made possible the original structure, and later assumed the entire undertaking.

VERMONT

Census of Mental Patients.—A census of mental patients in state hospitals in 1927, made by the U. S. Department of Commerce with the cooperation of the state hospitals, showed that the Vermont State Hospital had 152 first admissions during the year as compared with 164 in 1922, and the decrease in first admissions between 1922 and 1927 represents a still larger decrease relative to the general population as shown by the fact that the first admissions in 1927 numbered 43.1 per hundred thousand of population as compared with 46.5 in 1922. The total number of patients under treatment in the state hospital has steadily increased from 572 on Jan. 1, 1910, to 838 on Jan. 1, 1928, and this increase was relatively much greater than the increase in the population of the state during this period, since on Jan. 1, 1928, there were 237.8 patients under treatment to each hundred thousand of the general population as compared with 160.7 patients per hundred thousand on Jan. 1, 1910. The number under state hospital care per hundred thousand of population showed an especially rapid increase in 1922. The total number of patients present in the Vermont State Hospital, Jan. 1, 1928, amounted to 444 males and 394 females.

WASHINGTON

Society News.—The Seattle Pediatric Society entertained Tacoma pediatricians, June 15, at a lawn supper at the home of Dr. R. S. Miles, Jr., at Lake Steilacoom; the remainder of the evening was passed informally around a log fire.——Dr. Emilian O. Houda, Tacoma, addressed the Walla Walla County Medical Society, June 7, on the cause of goiter.——Dr. J. J. Markey has resigned after several years' service with the Washington Tuberculosis Association as examiner to engage in private practice in Seattle.

Electric Blanket Pedler Arrested.—On complaint of the Public Health League of Washington, "Dr." L. C. Hornschu was arrested in Auburn, July 7, on a charge of practicing medicine without a license. Hornschu has been traveling about the state apparently about a year. Soon after his arrival the *Health Messenger* says, he informed a local newspaper that he had lectured in medical colleges and had written health articles under the pen name of "Lawrence Lorenz." Only recently, however, was definite evidence obtained of his having diagnosed disease and supplied drugs. The warrant for his arrest was issued, June 10, but the league was unable to find him until July 7.

WEST VIRGINIA

Another Package Library.—The Charleston Public Library has offered the West Virginia State Medical Association the use of three rooms in the building for the purpose of establishing a package library; if the offer is accepted the rooms will provide space also for council and committee meetings in Charleston and for the office of the executive secretary, who will conduct the package library.

Fees Returned—Jail Sentence Suspended.—W. C. Garrison, who, it is reported, claimed he had powers beyond the knowledge of the ordinary physician, was arrested on complaint of the city-county health commissioner for practicing medicine without a license, fined $50, and sentenced to six months in the Ohio County jail. The jail sentence was suspended when Garrison returned $108 to one of his patients and $36 to another, the amounts representing the fees that they had paid for his services. Garrison informed the county officials that he had been a spiritual leader for many years.

Society News.—The program of the next meeting of the Central Tri-State Medical Society, Huntington, September 20, includes four guests; Drs. Theodore H. Weisenburg, University of Pennsylvania Graduate School of Medicine; Edward Speidel, professor of obstetrics, University of Louisville School of Medicine; John H. Stokes, professor of dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, and Verne C. Hunt of the Mayo Clinic, Rochester, Minn.——The Raleigh and Mercer county medical societies held a joint meeting, July 26, at Beckley, followed by a supper. The president of the state society, Dr. Charles A. Ray, Charleston, attended; Dr. Oaka S. Hare, Bluefield, read a paper on "Physical Measures in Gynecologic Conditions"; Dr. James E. Blaydes, Bluefield, "Points for General Practitioners in Regard to Nasal Sinuses," and Dr. Robert R. Stuart, Bluefield, "Anhydremia."——Some physicians traveled 200 miles to attend the meeting of the Central West Virginia Medical Society at Webster Springs, July 18. Papers were presented by Drs. Robert K. Buford, Charleston, and H. L. Robertson, Charleston, on the surgical and medical management of goiter.——At a joint meeting of the Monongalia and Preston county medical societies at Kingwood, July 13, Dr. Thomas Judson McBee, Morgantown, read a paper on "Backaches in Relation to Urology," and Dr. Harold C. Miller, Eglon, on "Prognosis of Measles Paraplegia."——Dr. Russell H. Paden, Parkersburg, assumed the duties of director of the division of child hygiene of the state department of health, July 1.

GENERAL

Change of Date of Examination.—The date of the examination to be given by the American Board of Otolaryngology at the Manhattan Eye, Ear, Nose and Throat Hospital, New York, has been changed to Thursday, October 11, instead of Friday, October 12. The secretary of the board is Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Neb.

Indians Contribute to Cancer Fund.—The fund established by the Swedish people on the seventieth birthday of King Gustav amounted, July 24, to $1,500,000. Among the contributors was the Quillayotte Tribe of American Indians, which gave $1,500. Prince William of Sweden on his recent visit to the United States was made a chief of the tribe. The fund is to be devoted to research.

Bar Association Celebrates Semicentennial.—The American Bar Association celebrated its fiftieth anniversary at the recent annual meeting in Seattle in a symposium which expressed the community of interest of the professions. Medicine was represented by Dr. William Allen Pusey, Chicago, a former president of the American Medical Association, who reviewed its progress in the last fifty years; Associate Justice Harlan F. Stone, Washington, D. C., spoke on fifty years' work of the Supreme Court of the United States; Rev. Ozora S. Davis, president, Chicago Theological Seminary on the progress of theology; John H. Finlay, L.L.D., editor, New York *Times*, on progress in education, and Mr. F. B. Jewett, vice president, American Telegraph and Telephone Company, progress in engineering. Silas H. Strawn's presidential address was on the progress of law.

Academy of Ophthalmology and Otolaryngology.—The thirty-third annual meeting of the American Academy of Ophthalmology and Otolaryngology will meet at St. Louis, October 15-19, under the presidency of Dr. Luther C. Peter, Philadelphia, and with headquarters at the Hotel Statler. The council and the examining boards will hold their first meeting the previous Sunday; the examinations start at 8 o'clock Monday morning in ophthalmology and otolaryngology. Tuesday evening there will be a banquet, dancing and bridge, and Thursday noon the president's luncheon honoring those participating in the program. Thirteen papers will be presented in each section. The principal symposium will be on recent developments in neurology as it applies to the eye, ear, nose and throat by Drs. Lewis Fisher, Philadelphia; Robert Levy, Denver, and Ernest Sachs, St. Louis. The guest of honor will be Dr. Edward Jackson, Denver. The instructional program will be in the nature of conferences, for which twenty-six rooms have been reserved. A fee of one dollar will be charged for each conference.

Medical Library Association.—The annual meeting of this association will be at the New York Academy of Medicine, New York, September 5-7, under the presidency of Dr. Archibald Malloch. The interrelation of medical and other libraries will be discussed under the subheads (1) university libraries, by James T. Gerould, librarian, Princeton University; (2) public libraries, by Harry M. Leydenbery, New York, Public Library; (3) law libraries, by Franklin O. Poole, librarian, New York Bar Association, and (4) commercial libraries, by Florence Bradley, librarian, Metropolitan Life Insurance Company. There will be a question box, Thursday morning, conducted by Miss Blake Beem, librarian, University of Arkansas School of Medicine, and addresses by Dr. Frank Overton, Patchogue, N. Y., on abstracts and indexes, by Dr. Robert L. Dickinson of the National Committee on Medical Nomenclature, on standardization of nomenclature of conditions and diseases, and a round table discussion of the *Quarterly Cumulative Index Medicus* and Index Catalogue of the Surgeon General's Office. There will be trips to various libraries and the new medical center.

Society News.—The annual assembly of the Inter-State Post-Graduate Medical Association will be held at Atlanta, October 15-19; eighty-two clinicians and teachers from various countries are on the program.——The eighteenth annual clinical congress of the American College of Surgeons will be at Boston, October 8-12. The oration in surgery will be given by Dr. Vittorio Putti, professor of orthopedic surgery, University of Bologna, Italy. Headquarters for the conference will be at the Hotel Statler.——A regional conference on social hygiene will be held at the Hotel Brown, Louisville, Ky., October 11-13, sponsored by the American Social Hygiene Association and the Kentucky Social Hygiene Association. There will be speakers representing official and voluntary agencies, including Surg. Gen. Hugh S. Cumming, Drs. John H. Blackburn, Bowling Green, president-elect of the Kentucky State Medical Association, Hugh H. Young, Baltimore, William F. Snow, New York, Benjamin Franklin Royer, New York, Arthur T. McCormack, Louisville, and others.——The fourth annual meeting and dinner of the Ensworth-Central-Northwestern Medical College Alumni Association will be held at St. Joseph, Mo., October 11, following the clinical conference in Kansas City, October 9-11. All day clinics will be held in hospitals. Graduates are requested to send their names to the secretary, Dr. Charles W. Fassett, 115 East Thirty-First Street, Kansas City, Mo.——At the annual meeting of the American Hospital Association, San Francisco, August 9, Dr. Christopher G. Parnall, Rochester, N. Y., was made president elect; Dr. Lewis A. Sexton, Hartford, Conn., Miss Ada Belle McCleer, Evanston, Ill., and G. W. Curtis, Santa Barbara, Calif., vice presidents; Asa S. Bacon, Chicago, reelected treasurer, and Dr. George F. Stephens, Winnipeg, E. S. Gilmore, Chicago, and Dr. Walter H. Conley, New York, trustees. Dr. Louis H. Burlingham, superintendent, Barnes Hospital, St. Louis, is the president for the ensuing year.

Bequests and Donations.—The following bequests and donations have recently been announced:

Woman's Hospital of Philadelphia, $5,000, by the will of the late Mary E. Leedom.

Jewish Hospital, Philadelphia, $1,000; Jefferson Hospital, $500, by the will of Adolph Uffenheimer.

Victory Memorial Hospital, Brooklyn, $5,000, from Edmund C. Babcock to purchase radium.

Judson Health Center, New York, $50,000, the proceeds of the charity carnival, May 2.

St. John's Hospital, Long Island City, and St. Anthony's Hospital, Woodhaven, each $1,000, by the will of the late Patrick J. Mara.

Mount Sinai Hospital, New York, $40,000, and Montefiore Hospital, New York, $25,000, by the will of the late Mrs. Minnie Hayman.

Washington Park Community Hospital Endowment Fund, Chicago, $75 from the Daylight Club.

Staten Island (N. Y.) Hospital, $35,000, by the will of the late Miss Mary A. Dill.

New York University, $100,000 and 150 acres of land in Delaware County, N. Y., by the will of the late Eugene Stevenson of Paterson, N. J., an alumnus.

St. John's Hospital, Yonkers, N. Y., $5,000, by the will of the late Albert Bunker.

Montefiore Hospital and Mount Sinai Hospital, New York, each $10,000, by the will of the late Harmon W. Hendricks.

Kewanee Public Hospital, Kewanee, about $50,000, by Mr. and Mrs. Peter A. Waller for a new nurses' home.

St. Joseph's Hospital, Joliet, $12,000, by the will of Miss Mabel Chapman.

Michael Reese Hospital and the United Jewish Charities of Chicago, each more than $150,000, and the University of Chicago more than $300,000, by the will of the late Adolph J. Lichtstern.

St. Luke's Hospital, New York, more than $5,000,000, by the will of Mrs. Mary Ann Fitzgerald.

Harvard University and the University of Rochester to share shortly a bequest of more than $600,000, the Rochester General Hospital, $100,000, and the Hillside Home for Children, Rochester, $15,000, by the will of the late Dr. Charles A. Dewey, a Rochester N. Y., physician.

Presbyterian Hospital, Philadelphia, $5,000, by the will of the late William J. McComb.

Notre Dame Hospital, Montreal, Canada, $100,000, by the will of Sir Mortimer Davis.

St. Luke's Hospital, St. Louis, about $1,500,000 for the construction of a John Fowler Memorial Diagnostic Clinic and Research Laboratory, by the will of the late Mrs. Cora Liggett Fowler, St. Louis.

Memorial Hospital, Mattoon, Ill., $7,500, by the will of the late Miss Jennie Cloughley.

East Liverpool City Hospital, East Liverpool, Ohio, $175,000, from William H. Harker to construct a new wing.

Marquette University, Milwaukee, $25,000, by the will of Charles Pfister for the erection of a university hospital.

St. Agnes' Hospital, Baltimore, $15,000, by the will of the late Charles E. Gettslich.

Stetson Hospital, Philadelphia, $10,000; Servants of Relief of Incurable Cancer, $20,000; Federation for the Support of Jewish Philanthropic Societies, $250,000; the Catholic Charities, New York, $150,000, among many other bequests to charity, by the will of the late Aaron Naumburg.

Cortland County Hospital, Cortland, N. Y., a gift of $30,000, from George A. Brockway for an addition to the nurses' home.

Batavia Hospital, Batavia, Ill., $20,000, by the will of Jed F. McNair for the erection of a memorial to be known as the Harvey and Mary Hospital.

St. Anthony's Hospital, Rock Island, Ill., $1,000, by the will of Marie J. Berkely.

Baptist Hospital, Athens, Ohio, $10,000, from Dr. William N. Alderman, as a memorial to endow a room.

Government Services

Vacancies in Medical Administrative Corps

The war department announces an examination of applicants for appointment as second lieutenants in the medical administrative corps of the army, October 8-13, to be conducted simultaneously in the United States, the Philippine Islands, Hawaiian and the Panama Canal departments. The examination is open to enlisted men in the medical department, as well as to persons outside the service. There are now three vacancies in the corps, and the total authorized strength of the medical administrative corps is only seventy-two. Requests for information about the examination should be addressed to the adjutant general of the army.

Navy Personals

Lieut. Comdr. Robert T. Canon has tendered his resignation from the service. Capt. John B. Mears has been ordered from the naval hospital, Canacoa, Philippine Islands, to the training station at San Diego for duty, relieving Capt. John B. Kaufman, who has been ordered to duty as medical officer on the staff of Rear Admiral Thomas J. Senn, commander of the destroyer squadrons of the battle fleet.

Changes in Veterans' Bureau Personnel

The following changes are noted in the July number of the *U. S. Veterans' Bureau Bulletin:*

HOSPITALS

Dr. Thomas Addis, resigned at Palo Alto Diagnostic Center, Palto Alto, Calif.
Dr. Chester D. Allen, appointed at Memphis, Tenn.
Dr. Matthew C. Baines, transferred to Bronx, N. Y.
Dr. Erasmus S. Baker, transferred to Fort Bayard, New Mexico.
Dr. Victor H. Bean, resigned at Minneapolis.
Dr. Benjamin W. Black, resigned at central office.
Dr. Richard Blackmore, transferred to Northport, L. I.
Dr. George F. Brewster, transferred to Northport, L. I.
Dr. Lance E. Briscoe, transferred to Fort Harrison, Montana.
Dr. John R. Boswell, transferred to Algiers, La.
Dr. William G. Cassels, resigned at Edward Hines, Jr., Hospital.
Dr. Emanuel J. Cohn, appointed at Sheridan, Wyo.
Dr. Edgar O. Crossman, transferred to central office.
Dr. Fayette C. Ewing, resigned at Alexandria, La.
Dr. Hiland L. Flowers, resigned at Bronx, N. Y.
Dr. Robert M. Fulwider, resigned at Fort Lyon, Colorado.
Dr. Enoch S. Fulton, transferred to Oklahoma City.
Dr. William J. Heffner, transferred to Northport, L. I.
Dr. Hartsford L. Ison, transferred to Legion, Texas.
Dr. Isham Kimbell, transferred to Northport, L. I.
Dr. Julius J. Klein, transferred to San Fernando, Calif.
Dr. Justin E. Lacy, transferred to Northport, L. I.
Dr. Edward W. Lazell, transferred to Northport, L. I.
Dr. James L. Lewis, transferred to Algiers, La.
Dr. Ottis Like, reinstated at Camp Custer, Michigan.
Dr. Thomas M. Maxwell, resigned at Fort Harrison, Montana.
Dr. J. Baldwin McComb, transferred to Algiers, La.
Dr. Henry I. McPherrin, appointed at Knoxville, Iowa.
Dr. Agha B. Musa, transferred to Bronx, N. Y.
Dr. Leonard A. Meyers, resigned at Alexandria, La.
Dr. John L. Norris, transferred to Augusta, Ga.
Dr. William W. Pretts, appointed at Waukesha, Wis.
Dr. Linnaeus H. Prince, transferred to Northport, L. I.
Dr. John A. Pringle, appointed at Gulfport, Miss.
Dr. Guy F. Robinson, transferred to Livermore, Calif.
Dr. Anton R. Schier, resigned at Perry Point, Md.
Dr. Espy K. Schurtz, transferred to Jefferson Barracks, Mo.
Dr. Richard W. Soper, transferred to Augusta, Ga.
Dr. Frank B. Steele, appointed at Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Edgar L. Sturkey, transferred to Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Burton A. Thompson, transferred to North Chicago, Ill.
Dr. John B. Webb, resigned at Legion, Texas.
Dr. Dayton C. Wiggin, transferred to Northport, L. I.

REGIONAL OFFICES

Dr. Joseph H. Allen, appointed at Denver.
Dr. Aloysius N. J. Dolan, transferred to Portland, Ore.
Dr. Lawrence Gilman, resigned at Indianapolis.
Dr. Donald B. Holloway, resigned at Cleveland.
Dr. Glen D. Kimball, resigned at Louisville, Ky.
Dr. Harry K. Langdon, resigned at Indianapolis.
Dr. Matthew T. Moorehead, transferred to central office.
Dr. John F. O'Brien, appointed at Boston.
Dr. Gilbert A. Rhodes, resigned at Oklahoma City.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 28, 1928.

The Annual Meeting of the British Medical Association

The ninty-sixth annual meeting of the British Medical Association took place at Cardiff, where an official welcome was given by the lord mayor.

PRESIDENTIAL ADDRESS

The president, Sir Ewen Maclean, delivered an address in which he reviewed medicine from the ancient Cymric period to the present day. He thought that there were grounds for crediting the druids with greater preoccupation with medicine than was usual in a primitive priestcraft. Coming to modern times, he thought that under the national health insurance act people were provided with a better grade of medical service than before. But of the making of regulations there was no end. It would be a boon if some one would intelligibly collate the multitude of regulations. The degree of success so far attained called for further developments. He could not see the risk of any sudden ultimate transmutation to a whole-time state medical service, with its handicapping officialism and sacrifice of personal freedom. Reviewing the achievements in the last twenty years, which represented a vast saving of human suffering and an appreciable prolongation of human life, Maclean said that if one of the old alchemists came to life today he would find himself in all else save technic and terminology very much at home. "Of late years thought and deed have turned dramatically toward the prevention of disease, and shadow-like immunology dogs the footsteps of bacteriology." The association has taken an active part in the investigations on a wide, thorough scale of that most prevalent and disabling condition, rheumatism; and the statements and recommendations of the latest report should do much to establish a machinery calculated to control, at all events, the main features of the problem.

THE PROBLEM OF CANCER

The cause, whether it be single or collective, of that dread disease cancer still eludes, will-o'-the-wisp-like, the grasp of the intensive research which has been, and is being, conducted in the clinics and laboratories of the world. The ears of multitudes are indeed attuned to listen in to any glad news of a discovery; but the public and the press may be well assured that, whencesoever the claim may arise, it will be, in the interests of the whole community, submitted to sympathetic but close examination by those who are best qualified to judge. Nothing could be more deplorable in its results than the premature announcement of claims as to causation or successful treatment of so prevalent a malady. Meanwhile, the wisely directed propaganda which has been carried on has had a widespread effect in inducing many people to seek advice when the earliest possible manifestations of the disease have appeared, and so becoming included within the ambit of definitely curative treatment. Indeed, apart from the presence of symptoms, in an increasing measure people are now coming to observe the wise precaution, more prevalent in America than in this country, of being overhauled or "checked-up" at intervals by their medical attendants. By such a practice the presymptomatic stage of disease may be detected and effectively dealt with.

VOLUNTARY AND POOR LAW HOSPITALS

The subject of coordination of hospital provision, described as the most important topic that had been submitted to the representative meeting, was debated by the association. Dr.

W. McAdam Eccles, chairman of the hospitals committee, moved: "That the scheme of cooperation of voluntary hospitals with municipal hospitals for the coordination of hospital provisions be adopted and submitted to the minister of health. There had been practically a working in too water-tight compartments as between voluntary and poor law hospitals, with almost antagonism. This condition had considerably changed during the war for the better, and the time was approaching when the voluntary hospitals should cooperate for national good. The voluntary hospitals were not to be endangered in any way, and certainly not in their administration, which should be free from external control. But for effective coordination there must be a central consultative hospitals council for England and Wales so representative of all the various interests involved. That body was to be consultative, not administrative, and its functions would be that of a liaison officer. Then there would be need of area coordination of hospitals committees, so that all the hospitals of an area could be utilized in the best possible manner. One should be a central or base hospital round which the others would be grouped. Another essential point was cooperation in the actual treatment of the sick. In spite of opposition, the resolution was carried.

NOISE AND HEALTH

The effect of noise on public health was referred to by Dr. John Stevens. He proposed a resolution that, in the interest of public health, the British Medical Association should support any measures which might be taken so to alter or amend existing legislation as to give greater power to local authorities to suppress unnecessary noise which was disturbing, and that noise from 11 p. m. to 6 a. m. which was susceptible of being mitigated or prevented and was injurious to health, should be a nuisance under the meaning of the public health acts. This noise by day is bad enough, but the extension of these innumerable noises, mostly discordant, far into the night is an increasing menace to the public health. Among them were the barking of dogs, the clatter of milkcans, motor vehicles, and perhaps even worst of all, motorcycles. Then there were noisy parties going home from dances. The injurious effects of noise showed themselves rather by their influence on the central nervous system through disturbance of sleep and so-called functional disturbances. Vibrations, even unaccompanied by sound, also affected injuriously the whole bodily frame. The loss of working efficiency could not be accurately assessed, but one estimate was that it impaired the working efficiency of this country by $5,000,000 a week.

FORMATION OF INTERNATIONAL ASSOCIATION OF PHYSICIANS

At the representative meeting, reference was made to the formation of the Association Professionelle Internationale des Médecins, the object of which is to establish an international union and bureau for the interchange of information and ideas concerning the social and political aspects of medical practice. The council decided to send the medical secretary as an observer to the first annual conference, which will take place in Paris in September, but decided not to join the organization as there was not sufficient gain to set against the expense of annual membership, combined with the demands made on the time of the staff. The council was willing at all times to furnish other medical associations, either national or international, with any information at its disposal, by reason of its experience in social legislation in relation to medicine. However, a resolution instructing the council to take necessary steps toward full membership was proposed. It was pointed out that medicine had no barriers and that only by combination and cooperation could the association expect to be the use it ought to be to the general medical world. Medicine would have to take its place among the nations at Geneva. The resolution was carried by a large majority.

TREATMENT BY ELECTRICITY

Mr. Souttar, chairman of the science committee, introduced the subject of treatment by radiation and electricity. In a report on this subject the council pointed out that the law put no restrictions on the use on any person of such powerful agencies as electricity, radium, x-rays and ultraviolet radiation, and there was the risk of serious mischief. The recent development of ultraviolet apparatus and its sale for amateur and domestic use were not without dangers. The apparatus had caused serious harm to the eyesight. Other risks apart, there was good reason why that form of treatment should be confined to properly trained persons. Similarly diathermy, from faulty application, might produce burns, very slow to heal, and, applied in the region of the brain, might cause giddiness. Electricity in its various forms, and the several methods of irradiation were, in unskilful hands, agencies which might adversely affect existing disease conditions, might make quiescent disease active and might inflict positive injury on various organs. Even cases of death had been traced to those methods. Mr. Souttar moved that, in view of the risks to the public involved in the use of electricity and radiation as methods of treatment by untrained and unqualified persons, it is to be desired that (1) suitable courses of training be organized under medical direction for persons who wish to administer this form of treatment; (2) persons who have satisfactorily followed such a course should be entitled to have their names entered on an approved roll; (3) one of the conditions attached to admission to and maintenance on the approved roll should be abstention from the treatment of any patient except on the responsibility and under the general supervision of a physician; and (4) patients who require electrical or radiation treatment should be referred only to those persons whose names are on the approved roll. The resolution was carried by a large majority.

MATERNAL MORTALITY

Sir Ewen Maclean, president of the association, submitted a report on the causation of puerperal morbidity and mortality. It stated that it was unfortunate that the report on "maternal mortality" had been taken to indicate that the persistence of a high puerperal mortality rate might be attributed mainly to imperfect attendance at childbirth and especially to the default of physicians as a body. In only a relatively small number could any sound indictment either of physician or of midwife be based on the facts as stated. An examination of the causes of death in statistics connected with maternity work showed that many of those deaths might have been avoided, and it was through antenatal supervision that that could be accomplished. Maclean said that the subject matter of the report was of supreme importance internationally, nationally and individually. Anything that might be done to solve the problem in this country would be of help to all other countries. The government had set up two very important committees, the personnel of which was sufficient to reassure all that the matter would be carefully considered. The meeting passed a number of recommendations including that such immediate steps be taken as would insure cooperation between physician and midwife, that increased facilities should be provided for training medical students, with especial reference to antenatal work, that a condition of payment of maternity benefit under the health insurance act should be that the mother had had at least one antenatal examination, and that there was need for a further provision of beds set aside for maternity cases in institutions.

ENCEPHALOMYELITIS IN VIRUS DISEASES AND EXANTHEMS

In the Section of Pathology and Bacteriology, Professor McIntosh called attention to the fact that clinical accounts of smallpox contain frequent references to the appearance of symptoms which suggest involvement of the nervous system.

In recent years a new type of encephalitis had been observed in relation to vaccination. Professor Turnbull had noticed the occurrence of this particular type so long ago as 1912. Altogether, some hundreds of similar cases had now been reported in Europe. Postvaccinal encephalitis bore a constant relation to vaccination, as regards both time and place. The condition manifested itself on the average from ten to fourteen days after vaccination as headache, delirium paresis, and ultimately coma and death in fatal cases. Some doubt had existed whether or not the condition was vaccinal in origin. Professor McIntosh thought that the vaccine virus was the causal agent, and presented a body of evidence in favor of this view.

PARIS

(From Our Regular Correspondent)

July 11, 1928.

New Anticancer Center in Paris

In addition to the large anticancer center established in Paris by the Curie Institute, which is directed by Madame Curie and Professor Regaud, a second has recently been established at Villejuif, in the suburbs of Paris. It will provide for cancerous persons residing in the outlying districts of the capital. Control will be vested in the Faculty of Medicine and it will be directed by Professor Roussy, whereas the Curie Institute is controlled by the Pasteur Institute and the Faculté des Sciences. The dedication of the new buildings occurred recently, although they are not yet completed. The research laboratories are likewise nearing completion. They are being erected near the Hospice Paul-Brousse, which has offered hospitality to several different services composing this new foundation. The group of buildings will comprise, on the completion of the institute, a number of hospital buildings consisting of wards for patients, consultation rooms, roentgenologic and surgical departments, and various laboratories. There will also be administrative offices and rooms for persons who come to work at the institute. In his dedicatory address, Professor Roussy outlined the work undertaken by the institute and referred to the dispensaries already established in several communes of the suburbs of Paris for the detection of cancer. These dispensaries are connected, for purposes of hospitalization, roentgenologic and surgical treatment, and researches, with the Institute of Villejuif.

Magnesia in Relation to Cancer

In a recent communication to the Academy of Medicine, Professor Delbet took up the question of the rôle of magnesia in the prophylaxis and arrest of the evolution of cancer. Dubar of Dijon first called attention to this matter when he pointed out that cancer is much less common in regions in which magnesia is found in the waters of springs. He treated cancers with injections of magnesium salts and retarded their development considerably. This was confirmed by Albert Robin, who pointed out, through painstaking analyses, that magnesia is abundant in the vicinity of cancerous tissues but does not exist in the cancer itself. Delbet has taken up these researches again as they do not seem to have received the attention they merit. He has studied particularly the effects of magnesium chloride, which he administered in daily doses of 1.2 Gm. He observed its effect on the liver, its efficacy in nervous trembling, its effects on the sequels of long periods of chloroform anesthesia, and, finally, its effect on general nutrition. For a certain length of time it will replace the vitamins in a diet in which these are lacking. In a group of animals deprived of vitamins, those who received magnesium chloride survived much longer. Delbet mentioned furthermore the well known action of magnesium carbonate on recurring warts and skin cancers. He applied this remedy successfully to small excrescences in his ears which had formerly reappeared every time he resected them. He then inoculated mice with cancer and treated some of them with magnesium chloride. Those that received it developed only minimal and stationary tumors, while the others died. Finally, cancerous tissue impregnated with magnesium salts seldom furnished successful grafts, and if it did, the tumors were generally benign.

Production Centers of Antimeasles Serum

Since Nicolle of Tunis and others have shown that convalescents' serum possesses immunizing properties in such diseases as measles and scarlet fever, it has been used frequently in children's hospitals. It has given absolute protection in 75 per cent of cases. As it is largely a prophylactic measure, it is also suitable for general use, especially in cities where the physicians establish their diagnoses early and can thus use it to protect the other children of families or of a school, in epidemics. It has been used mainly in the hospitals up to this time, however, and they now have much unutilized serum which the physicians in the cities need for their clientele. To meet their needs, the Assistance publique has created a depot at the Hôpital des enfants malades for the collection of unused serum to be supplied to them as needed to combat epidemics in schools and hospitals. An attempt will be made to create similar depots in the hospitals of other cities and to collect antiscarlatina serum as well as antimeasles serum.

Statue of Vulpian

A statue of the physiologist Vulpian, whose centenary was celebrated last year, has been erected in a street adjoining the Academy of Medicine. It represents Vulpian in meditation, dressed in professorial robe. The statue is the work of a physician, Dr. Paul Richer, professor of anatomy at the Ecole des Beaux-Arts, who has acquired considerable fame as a sculptor and who is a member of the Académie des Beaux-Arts.

The Recrudescence of Syphilis

Professor Jeanselme has presented to the Academy of Medicine a report that syphilis is on the increase in the region of Paris, in spite of the great efforts that have been made to combat it. After the increased incidence during the war, syphilis had, since 1919, been steadily decreasing, and hopes were entertained that it might gradually be eradicated. Unfortunately, during the past three years the incidence has again increased, so that now the figures reported are in excess of those of 1919. The common argument that the cases merely seem more numerous in official statistics because patients who formerly concealed their infections are willing to present themselves at the dispensaries does not hold. This evidence of great confidence in the dispensaries dates back several years, and, in the opinion of Jeanselme, this unquestionable recrudescence must be attributed to other causes. It is due, in the main, to the development of clandestine prostitution, since, in the name of individual liberty and of morals, official surveillance of prostitutes has been to a great extent abandoned. It is due likewise to the negligence of patients who cease taking treatment as soon as the visible lesions disappear. Another cause, no doubt, is the abandonment of mercurial treatment (the effects of which, though more remote, are more certain) for arsphenamines and bismuth, which effect, possibly, more brilliant cures, but the results are certainly less permanent.

Sanatorium in Paris for Persons of Moderate Means

The prefect of the Seine has induced the municipal council to cede 10,000 square meters of land now occupied by the Paris gas plant (which is to be removed to the suburbs) to a volunteer organization, the Association pour le développement de l'assistance aux maladies, which will construct on the site a sanatorium for persons of moderate means. There is, at present, in Paris no institution that meets their needs. The hospitals are reserved for the indigent. The clinics and private hospitals, partly of necessity, charge prices which make them accessible only to the rich. Persons of modest means—petty officials, small capi-

talists, retired persons, and the like—cannot be admitted to the city hospitals and are unable to pay the rates of the private clinics. They have to be cared for in their homes, at great expense, by their own physicians and if they are ill with infectious diseases, it is almost impossible to isolate them effectively. The new hospital will therefore render great service to a large and important part of the population. The private organization that is sponsoring this enterprise stands in high regard. It established, some time ago, in the rue Amyot, the Ecole modèle d'infirmières (school for nurses); the new hospital will furnish students of this school with practical experience.

RIO DE JANEIRO

(From Our Regular Correspondent)

July 15, 1928.

Zarate's Method of Chondrotomy of Symphysis Pubis

Dr. Maurity Santos referred the subject of Zarate's method of chondrotomy of the symphysis pubis for discussion to the Society of Medicine and Surgery. It is the simplest and quickest method of pelvitomy, and is said to be without risk. Other advantages are that it allows an interpubic dilation of 5 cm., permits normal passage of the head, eliminates dystocia, and also eliminates the indication for cesarean section in the majority of cases. He reported a case of infection in which he employed it in preference to cesarean section, after sixty hours' labor, obtaining a living child and saving the life of the mother. He believes that when it is indicated it is an incomparable method of operative procedure and urges its use. It is gaining in favor among European authorities.

Quinidine in Chronic Malaria

Dr. Oscar Clark, from his study of the treatment of chronic malaria with quinidine, brought to the attention of the academy a series of cases which he divided into two classes: first, those in which good results were obtained after the unsuccessful use of quinine and methylthionine chloride, and, second, those in which quinine alone was used without success.

Report of the Minister of Public Health

Dr. Bonifacio Costa, fellow of the Society of Medicine and Surgery, and minister of public health, asserted, as a result of the health report, that carriers of contagious disease germs would be prevalent as long as government medical supervision of each individual was lacking. He emphasized that many persons with incurable diseases were still capable of working. He then emphasized the need of general education in preventive medicine, and also the need of a selected group of officials who would rigidly enforce all health measures for the good of the individual and the community.

After proposing a health program which he believes to be practicable, he concluded that the health reports should be indispensable elements for furnishing the minister with information; they should provide technical data for the study of biometry; they should make it possible to establish the radical or national type, and they should expose the defects of the people, giving a better understanding of the progress of eugenics.

Pithiatric Hemianesthesia

A case was reported by Dr. W. Berardinelli from the service of Professor Rocha Vaz. It was of a Portuguese patient, aged about 40, who had not recovered from an abdominal condition and who presented a total hemianesthesia with the involvement of both lower extremities. The pupillary reflexes of both eyes were unchanged. These and other symptoms permitted the diagnosis of pithiatric hemianesthesia, which was confirmed by psychotherapy, the patient being cured by persuasion in a few minutes. As such, the case is one of the Babinski-Nageotte syndrome, a disturbance capable both of appearing by suggestion and of disappearing by persuasion.

JAPAN

(From Our Regular Correspondent)

July 3, 1928.

Honors from Foreign Countries

Drs. Imamura, Kure and Fujinami of the Kyoto Imperial University have been honored this year, as follows: Dr. Imamura received a decoration from the French government, Dr. Kure was given one from the imperial household of Holland, and Dr. Fujinami had the degree of Doctor of Divinity conferred on him by Heidelberg University in Germany.

Examination for Foreign Practitioners

An examination was held, May 11 to 27, for foreign physicians practicing in Japan. The following were licensed: S. Felt, from Germany; W. F. Wenger, from Switzerland; B. Caldwell, Eugene Getsler and Harry W. Miller, from the United States; and Virginia M. Palmer, from England.

Popular Medical Lectures

Under the direction of Dr. Miyajima, about twenty professors of the Keio Medical College will give popular medical lectures during the summer. The subjects will be infectious diseases, dentistry, biology, radiotherapy, the attitude of forensic medicine to suicide, and similar topics.

Death of Dr. Noguchi

The sister of Dr. Hideyo Noguchi has been prostrated with grief since learning of his untimely death in Africa. She lives in an isolated rural district in northeastern Japan, and received the news from a journalist who was sent there purposely to tell her. At the time when the journalist arrived, the famous investigator's sister was working in her wheat field and the news caused her to drop her spade and burst into almost uncontrollable weeping. She had known of his illness for some time, and had been going to the village shrine each morning to pray for his recovery. In Dr. Noguchi's youth his sister helped him on the course which he pursued so brilliantly. The imperial government sympathizes with her in her great loss, and has honored his memory by conferring on him the order of the Double Rays of the Rising Sun of the second rank.

An impressive memorial service was held in Tokyo, June 29, in behalf of Dr. Noguchi. The opening address was delivered by Viscount Goto, after which memorial lectures were delivered by Viscount Ishiguro and Viscount Ishii. Dr. Hata then spoke on Noguchi's work in general bacteriology, and Dr. Doi on his work in tropical medicine. Other lectures were given, among which was Dr. Chiwaki's survey of his life, which was quite impressive. In preparation for the service, Professor Kimura of the Tohoku Imperial University arrived from the United States, June 8, with Dr. Noguchi's personal belongings and with preparations supplied by the Rockefeller Foundation of his bacteriologic studies on trachoma, yellow fever and syphilis.

Exhibition Concerning Hot Springs

At the suggestion of Dr. Fujinami of the Keio Medical College, a special exhibit was held in the Ochanomizu Museum in Tokyo for ten days beginning June 22. The exhibits dealt with the history of hot springs, analytic tables of the mineral water, spa literature, and the like.

An American Specialist on Insects Goes to Japan

Mr. William Cutright, specialist on insects of the United States Department of Agriculture, arrived in Yokohama, June 28, for a year's stay in Japan and other Asiatic countries. He will do research work in the Kyoto Imperial University on the Japanese flies that kill the American corn borer, the pearl-moth. There have been recent requests from Canadian and Hawaiian authorities for all rice straw used in packing toys and china exported from here to be thoroughly disinfected before use in order to kill this insect.

Personal

Dr. Tsurumi, commissioner in the health bureau of the League of Nations, returned home, June 18, on leave of absence.

Dr. Hata, who attended the international conference on syphilitic serum tests, held in Europe a few months ago, returned to Tokyo, June 23.

Dr. I. Otsubo, associate member of the Kitasato Institute, has been appointed director of the bacteriologic institute of the metropolitan police, succeeding Dr. Hirono.

Branch Hospitals of the Japanese Red Cross Society

The Kyoto branch hospital of the Japanese Red Cross is to be enlarged to meet the public demand for better hospital facilities. The chapter in Kochi City has also provided for a large new hospital with ample accommodations for outpatients.

Sanitary Officers' Conference

July 2, the home ministry summoned the chief officers of the local sanitary sections to a conference in the home department in Tokyo. The following topics were considered: (1) improvements in the sewerage system; (2) changes in the regulations for using antiseptics in the preparation of food and beverages; (3) improvement of general sanitary conditions; (4) improvements in the form for hygienic statistics; (5) prevention of leprosy; (6) care of patients; (7) enforcement of the laws controlling the prevention of venereal diseases; (8) prevention of smallpox; (9) prevention of scarlet fever; (10) control of the sale of opium, morphine, cocaine and allied drugs.

BERLIN

(From Our Regular Correspondent)

July 7, 1928.

Resolutions of the German "Aerztetag"

At the recent Danzig meeting of the Aerztevereinsbund of Germany, to which almost all German physicians belong, resolutions were passed, on (1) the crusade against narcotics, (2) the right of privileged communication, (3) the physician as a judge in disability claims, and (4) the status of the general practitioner.

THE CRUSADE AGAINST NARCOTICS

Professor Gaupp, director of the Nervenklinik in Tübingen, and Geheimrat Rost, member of the federal health service, stated the criteria governing the crusade as follows:

1. The increase of disorders resulting from addiction to morphine and cocaine demands measures for betterment, and the adoption of special regulations for the guidance of the medical profession as the natural protector of public health. Such control is all the more necessary since the demand for narcotics by an increased number of addicts has become a menace to the general public. The substances brought under the operation of the opium law cannot be legally obtained other than through a prescription signed by a physician, dentist or veterinarian. The use of these narcotic substances must be reduced to a minimum.

2. At the same time, the physician who holds strictly to the indications of medical science and practice must be left free to act according to his best judgment. Professional practice will remain unhampered if the scientific principles set forth in paragraphs 3 to 12 are observed.

3. The prescribing in substance (*in substanz*) of narcotics controlled by the opium law has no medical justification.

4. The administration of cocaine can be dispensed with, except in operations on the eye, nose, throat and ear, since the introduction of modern, non-habit-forming local anesthetics for direct use on the patient.

5. In the event that the maximal dosage must be exceeded in prescribing opiates, only morphine should be prescribed. This will aid in preventing habit formation and in protecting the physician, as other opiates do not offer any such material advantages that they can be used beyond the maximal dosage without harm to the patient.

6. The prescribing of morphine and other opiates is justified medically only when the physician, after careful examination of the case, concludes that other remedies will not suffice. Not every pain requires an opiate, and even a first injection of morphine may result in the formation of a habit. As cough remedies, morphine and heroin can nearly always be replaced by codeine and ethylmorphine hydrochloride. Morphine, however, is indispensable (in some cases, beyond the maximal doses) for the relief of intense pain; for instance, in severe attacks of renal and gallstone colic; in severe, acute pain from wounds; in the sequels of severe injuries, and in the final stages of such diseases as tuberculosis and cancer.

7. Only in exceptional cases may the morphine syringe be entrusted to attendant persons approved by the physician and who remain under his special control.

8. The medical treatment of drug addicts will consist, in principle, in the carefully regulated withdrawal and dishabituation, with suitable psychic after-treatment. Experience teaches that good results cannot be expected from withdrawal treatment as formulated for the patient in office consultations, or from withdrawal treatment in general, when the patient is left at home unrestrained.

9. The prescribing of cocaine for a cocaine addict is not justified medically. The physician does not run any danger of erring in the treatment of a cocaine addict or of endangering his life, if he refuses, under all circumstances, to prescribe cocaine.

10. Morphine must gradually be withdrawn from a patient as soon as the medical indications for its administration cease to exist. A similar method must be followed in the case of patients who have formed the habit of using other opiates.

11. In the treatment of the morphine addict, in regular practice, it is the essential duty of the physician to insist on the earliest possible institution of the withdrawal treatment. Until such treatment can be definitely begun, the physician must seek to pacify the patient with the smallest possible doses. The minimal quantity of morphine required to prevent any considerable abstinence phenomena should be ascertained by observation of the addict, without placing any reliance on his own statements. It will always be considerably less than the quantity last taken by the addict. If the institution of withdrawal treatment is impossible for external reasons, or for lack of insight or good will on the part of the addict, it is to the addict's interest for the physician to report the case to a committee of experts, the appointment of which is recommended by the medical organizations.

12. The conditions incumbent on the pharmacist, and which alone justify the dispensing of morphine and other narcotics, have been fulfilled if the prescription of the physician has been issued in accordance with the principles set forth in the preceding criteria. Aside from prescribing only such quantities of a drug as are needed for a given length of time, a prescription should contain the following items: (*a*) the name and address of the patient; (*b*) the place and date of issue; (*c*) detailed directions as to mode of using; (*d*) the name, address, telephone number and full signature of the prescribing physician, and (*e*) only such quantities of a drug as are needed for a given length of time. When made out in this manner it is practically safe from being counterfeit.

The foregoing criteria were approved by the following resolution:

The Deutscher Aerztetag accepts the foregoing criteria, though they impose certain restrictions on physicians, in order that it may do its part toward combating the formation of drug habits. At the same time, it demands, in keeping with its own attitude, that all other persons and organizations that have to do with narcotics (beginning with the importation of the raw material, and on through the manufacturing processes, wholesale selling, down to the dispensing in the pharmacies) shall, likewise, recognize the great need and show a willingness to make similar

sacrifices, in order that drug addiction, in the interest of public health, may be reduced to a minimum.

Furthermore, the Deutscher Aerztetag deems it necessary that the existing laws be amplified, partly by the extension to morphine addicts (and others) of the legal enactments pertaining to alcohol addicts, so far as they are applicable to drug addicts, partly by the introduction of more drastic measures, such as the suspension of a physician's or a pharmacist's license, in grave cases, in which, by the rights and privileges associated with the holding of such license, third persons are endangered. The Deutscher Aerztetag explicitly approves and adopts the ideas expressed in paragraphs 10 and 11 of Professor Gaupp's criteria.

THE RIGHT OF PRIVILEGED COMMUNICATION

The forty-seventh Deutscher Aerztetag, in agreement with the ideas contained in the two papers presented, considers as reprehensible any weakening of the principle of privileged communication as accorded to physicians, unless justified by the unquestionable demands of public health. The Aerztetag is strongly opposed to court orders requiring physicians to submit in evidence their data on patients, or the forcible inspection of the books of a physician containing such data. For the revision of the laws pertaining to criminal procedure, the following sentence is recommended to the legislative bodies as supplementary to section 97 of the laws of criminal procedure: "Written data of persons who, according to section 53, L. C. P., are entitled to privileged communication with respect to persons under indictment shall not be subject to court orders."

THE PHYSICIAN AS A JUDGE IN DISABILITY CLAIMS

1. In keeping with the dignity and esteem of the medical profession, physicians must be allowed the fullest liberty in determining the degrees of disability. The forty-seventh Deutscher Aerztetag imposes, therefore, on every German physician the moral obligation of taking extreme care in determining the degree of disability that a subject, examined officially, presents, for he is not in a position to make good such damage as may arise from expert opinions rendered without due care.

2. In order to preserve the objective character of such expert opinions as to disability, the medical profession demands that only in exceptional cases shall the subject examined be permitted to inspect, or to know the contents of, the written opinion; nor shall third parties be allowed to inspect such document without special permission.

3. The Aerztetag recommends that, from among the proper representatives of the medical profession in the various states and provinces, committees for the supervision of the rendering of expert opinions as to disability be formed, in order that complaints concerning inaccurate judgments may be forestalled.

STATUS OF THE GENERAL PRACTITIONER

The general practitioner, on the basis of his preparation and his required knowledge, is entirely competent and justified in treating children and patients with internal disease. The Deutscher Aerztetag regards it as its duty expressly to state that the German people must again come to consider the experienced family physician as its proper counselor. The treatment of children and patients with internal disease must not be denied him, though he may occasionally be expected to share the responsibility with the internist or the pediatrician.

Marriages

ENOCH MARVIN PORTER, Great Falls, Mont., to Miss Flossie McCowan of Lewiston, recently.

WILLIAM HORATIO BATES to Mrs. Emily Ackerman Lierman, both of New York, August 9.

WILLIAM B. GRISE, Austin, Minn., to Miss Myrtle E. Fellman of St. Hilaire, in July.

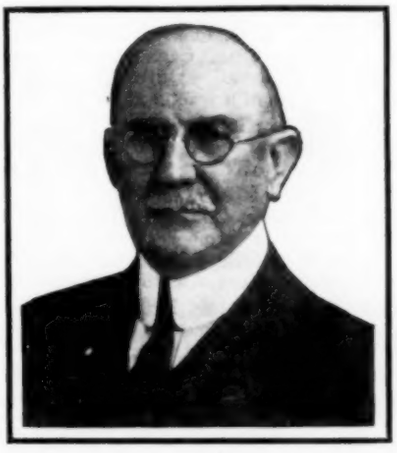
MILO H. TROVILLION to Miss Minnie Smith, both of Metropolis, Ill., June 29.

EDGAR HABECK to Miss Edna Koehn, both of Milwaukee, July 14.

Deaths

Samuel W. Welch ✠ State Health Officer of Alabama since 1917, a leading figure in public health work and medical organization in the United States, died in Montgomery, Ala., suddenly, August 21, aged 67. Dr. Welch was born in Alpine, Ala., the son of Dr. William A. Welch and Willie Ann Wallace Welch, on Feb. 14, 1861. He received his B.S. degree from Howard College, in Marion, Ala., in 1881. After study in Tulane University, he took up the study of medicine in the College of Physicians and Surgeons of Baltimore, receiving the M.D. degree in 1893. Later he did postgraduate work at the Johns Hopkins University and at the Columbia University College of Physicians and Surgeons.

After his graduation in medicine, Dr. Welch began practice at Alpine, Ala., in 1893. He became a member of the Board of Health of Talladega County in 1897, and of the State Committee on Public Health in 1903. In the latter group, he was chairman. From the beginning, Dr. Welch took part in many public health and medical educational activities. He was a member of the House of Delegates of the American Medical Association in 1917-1918, 1920-1921 and continuously since 1923.



SAMUEL W. WELCH, M.D., 1861-1928

In the House of Delegates he served notably on many reference committees. He has been a member of the Council on Medical Education and Hospitals since 1921, and was chairman of the Section on Preventive and Industrial Medicine and Public Health in 1921-1922. Dr. Welch was past president of the Talladega County Medical Society; a member of the Southern Medical Association; president of the Conference of American and Provincial Health Authorities; chairman of the National Malaria Committee of the Southern Medical Association; chairman of the Alabama State Committee on National Defense during the World War; a member of the board of trustees of Howard College from 1895 to 1915, and chairman of the board of education of Talladega County for eight years. As state health officer, he was conspicuous as a leader and organizer, surrounding himself with trained experts, and adopting and applying every important advance in the public health field developed in recent years. That the state of Alabama recognized the importance of these qualities is apparent from the fact that he received a new appointment of five years as state health officer in 1927.

The American medical profession loses by the death of Dr. Welch an important leader in public health, a sane counselor, an idealist who placed the good of humanity above every personal consideration.

Martin Francis Sloan ✠ Baltimore; Baylor University College of Medicine, Dallas, Texas, 1907; instructor in clinical medicine, Johns Hopkins University School of Medicine; at one time assistant to chair of medicine at his alma mater; past president of the Baltimore County Medical Society and the Maryland Tuberculosis Association; consultant in the U. S. Public Health Service; formerly medical director of the Maple Heights Sanatorium, Sparks, and superintendent of the Eudowood Sanatorium, Towson; dispensary physician to the Johns Hopkins Hospital; aged 43; died, July 29, at the Howard A. Kelly Hospital, of carcinoma of the lower lip with metastasis to the glands of the neck.

William Scheppegrell ✠ New Orleans; Medical College of the State of South Carolina, Charleston, 1889; past president of the American Academy of Ophthalmology and Otology and vice president of the American Laryngological, Rhinological and Otological Society; on the staff of the Charity Hospital; formerly associate editor of the *Laryngoscope* and co-editor of the *Annals of Otology, Rhinology and Laryngology;* author of "Hayfever and Asthma, Cause, Treatment and Cure"; aged 67; died, August 9, at the Mercy Hospital of hemorrhage and shock, following an operation for hypertrophy of the prostate.

Harry Bohn Metheny ✠ Aberdeen, Wash.; Lincoln (Neb.) Medical College, 1916; served during the World War; aged 35; on the staff of the Aberdeen General Hospital and St. Joseph's Hospital, where he died, July 13, of pulmonary tuberculosis, and tuberculosis of the kidney following a nephrectomy.

Charles Alfred Abernathy, Pulaski, Tenn.; University of Louisville (Ky.) School of Medicine, 1875; member of the Tennessee State Medical Association; formerly member and secretary of the state board of medical examiners; aged 75; died, August 4, of gallbladder disease and pneumonia.

Louis Burton Jolley ✠ North Chicago, Ill.; Hahnemann Medical College and Hospital, Chicago, 1905; formerly mayor of North Chicago; on the staff of the Victory Memorial Hospital, Waukegan; aged 50; died, August 1, at Torch Lake, Mich., of carcinoma of the pleura.

William Cherry, Toledo, Ohio; McGill University Faculty of Medicine, Montreal, Que., Canada, 1869; member of the Ohio State Medical Association; aged 83; died, August 4, at the Robinwood Hospital, of a fractured femur, received in a fall.

William Jackson McGranor, Port Allegheny, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1896; member of the Medical Society of the State of Pennsylvania; served during the World War; aged 57; died, July 20, of pneumonia.

Carey Allen Scurlock, Columbus, Ohio; Starling Medical College, Columbus, 1903; member of the Ohio State Medical Association; aged 55; died, July 30, at the Mount Carmel Hospital, Columbus, of acute dilatation of the heart.

John Collins Bossidy ✠ Lee, Mass.; Georgetown University School of Medicine, Washington, D. C., 1885; formerly on the staff of the Boston City Hospital; aged 68; died, July 8, at St. Luke's Hospital, Pittsfield, of septic sore throat.

Elijah Madison Ellis ✠ Crowley, La.; Memphis (Tenn.) Hospital Medical College, 1895; past president of the Louisiana State Medical Society; medical director of the Crowley Sanitarium; aged 61; died, August 10, of pneumonia.

Ernest Rogers Dryer ✠ Tucson, Ariz.; University of Cincinnati College of Medicine, 1919; member of the Colorado State Medical Society; aged 34; died, June 15, at Colorado Springs, Colo., of pulmonary tuberculosis.

Irby Andrew Black ✠ Lake City, Fla.; University of Alabama School of Medicine, Tuscaloosa, 1910; aged 46; on the staff of U. S. Veterans' Hospital number 63, where he died suddenly, July 28, of cerebral hemorrhage.

George P. Carpenter, Cedar Rapids, Iowa; Medical College of Ohio, Cincinnati, 1868; member of the Iowa State Medical Society; formerly on the staff of St. Luke's Hospital; aged 81; died, July 30, of angina pectoris.

Walter Burton Russell ✠ Springfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1900; aged 55; died, August 3, at the Chapin Memorial Hospital, of acute cholecystitis and chronic parenchymatous nephritis.

Richard Barrington Nevitt, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1874; formerly dean and professor of clinical surgery, Ontario Medical College for Women; aged 77; died recently.

Don Cameron Kyper, Bellwood, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1909; served during the World War; aged 40; died, July 2, at Hollidaysburg, of acute dilatation of the heart.

John Turner, Jr., Baltimore; University of Maryland School of Medicine, Baltimore, 1892; formerly member of the city health department; aged 55; was instantly killed, August 3, in an automobile accident.

Sigmund A. Czarra, Hyattsville, Md.; Kentucky School of Medicine, Louisville, 1893; aged 76; died, August 1, at the Little Cottage Hospital, San Rafael, Calif., of injuries received in an automobile accident.

Abraham Lincoln Stepp, San Juan, Texas; Barnes Medical College, St. Louis, 1911; served during the World War; aged 45; died, July 27, in McAllen, of injuries received in an automobile accident.

Henry G. Wood, South Boston, Va.; Howard University School of Medicine, Washington, D. C., 1901; aged 58; died, June 28, at the West Baltimore General Hospital, Baltimore, of diabetes mellitus.

Vincent De Paul Brown, San Francisco; Cooper Medical College, San Francisco, 1903; member of the California Medical Association; aged 47; died, June 25, at St. Francis Hospital, of lobar pneumonia.

George M. White ✠ Ingleside, Neb.; Syracuse (N. Y.) University College of Medicine, 1896; aged 57; superintendent of the Hastings State Hospital, where he died suddenly, July 28, of acute gastritis.

Thomas O. Clingan, Niles, Ohio; Homeopathic Hospital College, Cleveland, 1884; member of the Ohio State Medical Association; aged 74; died, August 4, of heart disease and arteriosclerosis.

Ernest Carl Weirick, Enola, Pa.; University of Michigan Medical School, Ann Arbor, 1904; member of the Medical Society of the State of Pennsylvania; aged 52; died, July 1, of meningitis.

Jefferson A. Farabough, Clinton, Ky.; St. Louis Eclectic Medical College, 1876; Eclectic Medical Institute, Cincinnati, 1894; aged 80; died, July 28, at the Mayfield (Ky.) Hospital, of paralysis.

Charles Fay Byers, Albany, Ohio; University of Cincinnati College of Medicine, Cincinnati, 1927; aged 28; died, July 19, at the Franklin County Sanatorium, Columbus, of tuberculosis.

Curtis Renwick Smith, Callahan, Fla.; University of Georgia Medical Department, Augusta, 1894; aged 63; died, June 9, at St. Luke's Hospital, Jacksonville, of cerebral hemorrhage.

Byron George Clark, New York; Dartmouth Medical School, Hanover, N. H., 1878; on the staffs of the Community and Fifth Avenue hospitals; aged 81; died, July 31, of heart disease.

William D. Woolwine, Pearisburg, Va.; University College of Medicine, Richmond, 1897; member of the Medical Society of Virginia; aged 52; died, July 27, of angina pectoris.

Ilona Reich (Mrs. Morris Blum), New York; Columbia University College of Physicians and Surgeons, New York, 1924; aged 30; died, August 4, of puerperal sepsis.

Charles E. Monfort, Zanesville, Ohio; Medical College of Ohio, Cincinnati, 1897; aged 50; died, July 28, at the Mount Carmel Hospital, Columbus, of chronic nephritis.

Henry B. Wilford, Marshallville, Ohio; University of Wooster Medical Department, Cleveland, 1881; Civil War veteran; aged 81; died, May 14, of paralysis.

John S. Wimer, Cleveland; Western Reserve University School of Medicine, Cleveland, 1891; aged 62; died, July 24, at the Glenville Hospital, of heart disease.

Charles C. Green, Des Moines, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1875; aged 81; died, June 20, of cerebral hemorrhage and arteriosclerosis.

Henry Jewell Macomber, San Francisco; Hahnemann Medical College and Hospital, Chicago, 1893; aged 57; died, June 23, of myocarditis and cholecystitis.

Martha B. Huson, New York; Woman's Medical College of Pennsylvania, 1890; aged 66; died, July 23, of acute fibrinous peritonitis and carcinoma of the uterus.

Edwin Marvin Sheldon, Ashton, Ill.; Medical Department of the University of the City of New York, 1879; aged 70; was found dead, July 25, of heart disease.

Joseph Weir Matthews, Caldwell, Texas; American Medical College, St. Louis, 1875; Confederate veteran; aged 79; died, June 13, of bronchopneumonia.

Harry Robson Hall ✠ St. Louis; Missouri Medical College, St. Louis, 1895; aged 57; died, July 25, at St. Luke's Hospital, of an infection of the neck.

Berna C. Fry, Huntington Park, Calif.; University of Louisville (Ky.) School of Medicine, 1900; aged 50; died suddenly in July, of heart disease.

James B. Wise, Frankfort, Ind.; Pulte Medical College, Cincinnati, 1880; aged 78; died, July 30, at the Home Hospital, Lafayette, of cerebral hemorrhage.

James Gideon Ditmars, Brooklyn; Long Island College Hospital, Brooklyn, 1898; also a clergyman; aged 70; died, July 25, of arteriosclerosis.

Albert Ambler Church, Cleveland; University of Michigan Medical School, Ann Arbor, 1897; aged 58; died, May 27, of cerebral hemorrhage.

Bureau of Investigation

"DENICOTINIZED" TOBACCO

Connecticut Chemists Prick Another Bubble

With the advent of dealcoholized—real and alleged—beer and decaffeinated—real and alleged—coffee, there have come on the market during the past few years denicotinized—alleged—cigarets, cigars and tobacco. In view of the number of inquiries THE JOURNAL has received relative to alleged denicotinized tobacco products, Bulletin 295, recently issued by the Connecticut Agricultural Experiment Station, has more than ordinary interest. This bulletin, in addition to containing the annual report on food products and drug products—reports, by the way, which are among the best of their kind and always of value to the medical profession and to health officials—also contains a special article on "'Denicotinized' Tobacco" by Dr. E. M. Bailey, the chemist in charge of the Analytical Laboratory of the station, in collaboration with O. L. Nolan and W. T. Mathis, assistant chemists.

To those who have followed the literature on the subject, it will not be a great surprise to learn that the Connecticut chemists found that the so-called denicotinized tobacco products are, broadly speaking, apparently denicotinized only in a Pickwickian sense. As the authors of the present article point out, the term "denicotinized," or "denicotined" as some manufacturers use, would, generally speaking, be construed by the tobacco-using public to mean "practically free from nicotine." The general public, and even the medical profession, have but the vaguest idea of the amount of nicotine in ordinary tobacco products. There is no average figure, because the variety of tobacco leaf and the varied conditions of culture and growth produce wide differences in the nicotine content. In fact, there may be substantial differences among the leaves of the same plant, the dark (upper) leaves having a higher nicotine content than the light (lower) leaves on the same stalk.

As Bailey, Nolan and Mathis point out, however, the tobacco consumer is not greatly concerned with technically exact descriptions, but he is interested in knowing how these processed tobaccos ("denicotinized" or "denicotined") compare in nicotine content with ordinary tobacco, for which no claims of reduced nicotine are made. In order that some figures might be available that would mean something to the tobacco-consuming public, the Connecticut chemists analyzed a number of ordinary tobacco products, using some of the popular and more widely advertised brands of cigarets, cigars and pipe tobaccos. They also analyzed the most widely advertised alleged denicotinized or denicotined tobacco products.

Their analyses showed that ordinary tobacco products gave a nicotine percentage varying from 2.89, the highest, to 1.06, the lowest, with an average nicotine percentage of 1.77. The results of their analyses of the so-called denicotinized tobacco products showed that these contained a nicotine percentage varying from 2.51, the highest, to 0.67, the lowest, with an average nicotine percentage of 1.28. Obviously to call such products denicotinized when they contain, on an average, over 72 per cent of the amount of nicotine found in ordinary tobacco products, is practically to practice a fraud on the public. The following figures, taken from the tables of the Connecticut chemists, show the nicotine percentage (on an air-dry basis) of some of the more widely advertised and better known cigarets. Some other cigarets, less well known, had a lower percentage of nicotine:

Egyptian Deities cigarets	1.28 per cent nicotine
Pall Mall cigarets	1.38 per cent nicotine
Phillip Morris cigarets	1.40 per cent nicotine
Lucky Strike cigarets	1.88 per cent nicotine
Old Gold cigarets	2.17 per cent nicotine
Camel cigarets	2.21 per cent nicotine
Capstan Navy Cut cigarets	2.30 per cent nicotine
Chesterfield cigarets	2.53 per cent nicotine
Piedmont cigarets	2.89 per cent nicotine

Of the so-called denicotinized cigarets, the analyses (also made on an air-dry basis) showed these nicotine percentages:

Sano cigarets	2.32 per cent nicotine
Cestrada Virginia cigarets	2.10 per cent nicotine
Dormy Turkish cigarets (Cestrada)	1.19 per cent nicotine
Sackett cigarets	1.02 per cent nicotine
O-Nic-O cigarets	0.94 per cent nicotine

From the figures given, it is quite obvious that persons who purchase alleged denicotinized cigarets are getting no such product as they are paying for. In fact, it would patently be better to buy some of the standard unprocessed cigarets having a low nicotine content than to purchase some of the so-called denicotinized products. Not only would the purchaser get less nicotine from the same number of cigarets, but he would not be lulled into a sense of false security and consume a larger number of cigarets in the belief that the product smoked was largely, or entirely, freed from its nicotine.

The Connecticut report, in addition to dealing with the nicotine percentages of cigarets, both unprocessed and so-called denicotinized, also deals with the nicotine percentage in certain brands of cigars and smoking tobacco. The following unprocessed cigars were analyzed for their nicotine content. The figures given are on an air-dry basis:

Reyes de Espana cigars	1.16 per cent nicotine
Manila cigars	1.31 per cent nicotine
Knickerbocker cigars	1.90 per cent nicotine

Compare the figures just given with the nicotine percentages found in products sold as either denicotinized or as low in nicotine content. These, too, are on an air-dry basis:

Sano cigars	1.07 per cent nicotine
O-Nic-O cigars	0.72 per cent nicotine
Sackett cigars	0.67 per cent nicotine

Of the smoking tobaccos, four brands of ordinary tobacco were analyzed (air-dry basis) with the following results:

Blue Boar Pipe tobacco	1.45 per cent nicotine
Weldon Slice	1.84 per cent nicotine
Hudson Bay Imperial Mixture	1.95 per cent nicotine
Gilbert's Mixture	2.09 per cent nicotine

Of the so-called denicotinized smoking tobaccos, the nicotine percentages, also on an air-dry basis, were shown to be:

Dormy Smoking Tobacco	2.26 per cent nicotine
Sackett Smoking Tobacco	0.98 per cent nicotine
O-Nic-O Smoking Tobacco	0.97 per cent nicotine

From the figures given, it is quite evident that the Connecticut chemists in their report were quite justified in making the following general statement:

"From these data it is quite obvious that, in general, the denicotinized products here represented contain but little less nicotine than do ordinary tobaccos of corresponding leaf types. Nothwithstanding considerable reductions which may be indicated in certain instances, it is not difficult to find among ordinary tobaccos brands in which nicotine is not greatly in excess of that present in the most thoroughly processed of these denicotinized products."

Correspondence

ASCARIS PASSED BY MOUTH

To the Editor:—I have not reviewed the literature, but in view of personal experience I was rather surprised to find that passage of *Ascaris* by mouth was considered unusual, as noted in the comment by Dr. Jennie Kantor (THE JOURNAL, July 28, p. 245).

While a medical officer of the United States Navy, I was stationed for some months on the island of Guam. Among the natives of Guam, *Ascaris*, hookworm and whipworm infestations are common. *Ascaris* infestation is to be found in nearly 100 per cent of the natives who have not had a recent worm treatment. Massive infestations in children under 4 years of age amounting to more than 200 worms passed during a worm treatment is not uncommon.

When a native patient in the naval hospital vomited an *Ascaris* worm, a note was made on the chart, but there was not apt to be any comment on the incident among the medical officers. My observations led me to believe that a high fever, in some fashion or other, predisposes to the vomiting of *Ascaris*.

An officer's wife, then pregnant, suffering with considerable nausea, and vomiting irregularly, on one occasion vomited an

Ascaris worm. Subsequently, repeated stool examinations were made, but no ova were found and no further worms were passed by mouth or by bowel.

At autopsies I frequently found up to as many as thirty worms in the stomach. *Ascaris* crawling from the mouth or nose of a recently deceased child was seen several times. Twice *Ascaris* was found in the gallbladder and once in the common duct.

A condition designated as "*Ascaris* asthma" was frequently seen in the hospital and not uncommonly caused death a few minutes after admission. This condition is ascribed to the entry of *Ascaris* larvae into the lungs. Another medical officer obtained a lung section showing these larvae from a native child dying of *Ascaris* asthma a few minutes after admission.

CHARLES STEWART, M.D., Philadelphia.

To the Editor:—I have been interested to read Dr. Kantor's report on *Ascaris* passed by mouth (THE JOURNAL, July 28). In Arabia the vomiting of ascarids is not at all unusual and I have particularly noticed the phenomenon in patients. It will be remembered that Dr. Kantor's patient was seriously ill with diphtheria. I have long since come to regard the incident with serious misgivings and as a bad omen. Most of the patients die; in fact, some of them are moribund when the vomiting of ascarids takes place. It would be interesting to know why the parasites are vomited. Is it a case of "the rats leaving the sinking ship?"

C. S. G. MYLREA, O.B.E., M.D., Kuwait, Arabia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FOUL ODOR IN SECRETIONS OF EXTERNAL EAR

To the Editor:—A man about 30 is suffering from a condition I have never heard of, and I should like to have you propose to me a better treatment than the one I use. The ear wax in the right ear has a fecal odor, while the left ear is sound and all right. The hearing is good in both ears, and the drumhead looks natural. To cure this I have filled the ear with 20 drops of mercurochrome solution; after a few minutes I fill it with peroxide, and let it foam out, after which I have cleaned it. The smell disappears, but even if the treatment is repeated every day for three weeks, in less than three days a dark colored ear wax shows up again, and the smell returns. Please omit my name.

M.D., Wisconsin.

ANSWER.—This condition may be explained in one of several ways. Either there is a small marginal perforation of the drum membrane in the region of the attic or antrum through which the foul secretion escapes into the external auditory canal, or there is a fistula in the bony canal above the region of the drum membrane leading directly into the antrum or attic. The latter condition sometimes develops without any previous subjective symptoms on the part of the patient, and is due to a suppurative process in the attic or antrum with destruction of overlying bone, and the periodic escape of foul pus into the auditory canal. The third possible explanation is that a mycosis affects the external auditory meatus. It is inconceivable that ordinary cerumen would in the first place form as rapidly as stated, and, in the second place, that it would be so quickly subject to saprophytic infection resulting in foul odor. It is advisable, therefore, that first of all a most careful examination of the drum membrane and bony portion of the external auditory canal be made in order to discover some such perforation as previously mentioned; and, secondly, to make a microscopic examination of the desquamated epidermis or débris found in the external canal in order to discover a possible fungus. If a mycosis is discovered, cleansing the canal with warm boric acid solution, then drying it carefully, and once a day adding a few drops of a solution containing alcohol 75 parts, resorcinol 2 parts and water to make 100 will probably relieve the condition. If fistula is found in the bony meatus, or a marginal perforation of the drum membrane, a radical mastoid operation or at least a modified radical operation is necessary.

TREATMENT OF TAPEWORM IN A CHILD

To the Editor:—I have under my care a child, aged 5 years, who has the beef tapeworm and who has been treated by various competent men for this parasite on three or four occasions without result other than the expelling of the segments. I am about to undertake another treatment and the parents have insisted that I try to get the best advice possible before undertaking it again, and I turn to you for assistance. In the first place, if I use aspidium, how much would you recommend for a child of average development of 5 years of age? If not aspidium, is there any other potent agent? (Pumpkin seeds have been tried without success.) What preliminary treatment should be given the child? I notice that there is a tendency to make the preliminary treatment, purging, etc., much less strenuous than formerly. Outline please just how much and in detail the purgatives necessary. If unsuccessful in the first attempt, how soon is it safe and advisable for me to give the child another treatment? Please omit name and address. M.D., Texas.

ANSWER.—To children, oleoresin of aspidium may be prescribed in doses of 0.5 Gm. per year of age but not exceeding a maximum dose of 5 Gm. Thus, a child, aged 5 years, may be given 2.5 Gm. of the drug floating on honey or maple syrup, administered in doses half an hour apart. The child should be persuaded to swallow it quietly, and may be given some candy or other dainty afterward.

The preparation should include saline catharsis for several days previously, light diet for the day before, and a liberal dose of magnesium sulphate (from 5 to 10 Gm.) and an evacuent enema the evening before the treatment.

At noon of the day of the treatment, from 5 to 10 Gm. of magnesium sulphate should be given to insure rapid evacuation of drug and worm. The child should stay in bed all day and be observed by the physician or a trained nurse between 10 a. m. and 2 p. m. During the morning of the treatment, no food is given other than bouillon or water. Any food desired may be given after 1 p. m.

Should the worm's head not be found in the stools passed into warm water and strained through black muslin, it is necessary to wait three months or more before repetition of treatment in order to make sure that the worm is still there, as evidenced by the passing of segments in the stool.

Introduction of the agent directly into the duodenum, where the head of the worm lodges, would be the proper course to pursue in case of repeated failure of other methods. The technic suitable for the adult would have to be modified to meet the requirements of the child. One-fourth the dose advocated should suffice.

TREATMENT OF TAPEWORM INFESTATION IN AN ADULT

To the Editor:—I have under my care a man with a tapeworm, *Dibothriocephalus latus*, which he has had for more than two years. He has been to many physicians but has never obtained permanent relief. I have given him adequate doses of aspidium and also pelletierine tannate after careful preparation, but have not been able to obtain the head. Any suggestions you may be able to give will be appreciated.

T. HUBERT REISS, M.D., Santa Rosa, Calif.

ANSWER.—To such cases applies the old adage, "If at first you don't succeed, try, try again," but not until after three months at least and only after spontaneous expulsion of new proglottides.

It is most essential to get the alimentary tract as empty as possible without weakening the patient too much. In a resistant case the patient should be kept in bed and on a liquid diet (1½ pints of milk and 1 pint of beef tea) for forty-eight hours and be given 30 cc. of castor oil the first night. The next afternoon, he is given 30 Gm. of magnesium sulphate in a glassful of water. The third morning, another dose of saline purge should be given and the vermifuge administered two hours later.

A sufficient dose of the anthelmintic is the second item of importance. A dose of 8 cc. of the oleoresin of aspidium should not be exceeded, but that much given in a difficult case. It may be administered in capsules (0.5 cc. each) two every fifteen minutes until all are taken. Two hours later another dose of saline purge is administered.

If the bowels have not acted in an hour, an enema is given. The stools should be passed with the anus immersed in warm water. They should then be strained through black muslin.

In case the worm does not appear after the cathartic has acted, 2 cc. of carbon tetrachloride, U. S. P., may be given, followed in one hour by another dose of saline purgative; e. g., 15 Gm. of sodium sulphate.

Should this attack fail, a mixture may be used to hunt this elusive specimen, after one has waited the usual time required for the reappearance of segments in the stools to make certain that it is still there. Such a combination, containing nearly all the known anthelmintics, is the "early bird" mixture, composed of:

Pumpkin seed	8 Gm.
Cusso	4 Gm.
Pomegranate	4 Gm.

made in an infusion, to which are added:

Kamala	4 Gm.
Oleoresin of aspidium	4 Gm.
Glycerin	15 cc.
Mucilage of acacia	15 cc.
Water to make	240 cc.

After the usual preliminary treatment, this quantity is taken in two drafts two hours apart. Bastedo, from whose book this formula is taken, has several times seen severe gastro-enteric irritation with vertigo and prostration result from this mixture: but, he says, the "early bird" usually gets the worm.

The duodenal tube administration of the anthelmintic in resistant cases has been especially developed by Hans Schneider (Wien. klin. Wchnschr. **37**:338 [April 3] 1924). This not only has the advantage of not risking loss of the remedy by nausea and vomiting but also of avoiding its dilution by gastric contents, and of almost certain results with minimal dosage. The duodenal tube is introduced into the empty stomach the morning after a day's preparation with milk diet and cathartic. Half a dose of a senna infusion (5:100) is injected into the duodenum through the tube, and fifteen minutes later 2 Gm. of oleoresin of aspidium and 4 Gm. of extract of pomegranate mixed with the other half of the senna infusion. Then the tube is removed promptly. The worm was expelled in toto within half an hour to two hours in thirteen patients, in many of whom the older methods had been used without success. The author records four failures due to insufficient dosage (half the dose stated above) or to the fact that the tube had not entered the duodenum.

TREATMENT OF LEUKORRHEA IN PATIENT WITH DOUBLE VAGINA

To the Editor:—An unmarried woman, aged 33, had a double vagina, and the lower end of the uterus also was divided. She had leukorrhea, which required the use of a napkin all the time. I removed the septum, made the uterine cavity into one, and curetted the uterus, but the benefit was only temporary. The annoyance is so great that she wants the uterus removed. Can you suggest anything not so drastic that will possibly help this condition?

M.D., Kansas.

ANSWER.—The treatment of leukorrhea in a patient with a double vagina and double cervix is essentially that of leukorrhea in a patient with a single uterus. Abnormality of development predisposes to some interference with drainage; vaginal and cervical pockets must be searched for and corrected.

Leukorrhea is often stubbornly resistant to treatment. The chief sources of leukorrhea are the cervix and Skene's ducts. Cervical foci are treated by thorough dilation, by antiseptic applications, by multiple cauterizations with an electrical nasal cautery knife, or by surgical excision of the endocervix. Infected Skene's ducts are best treated by excision. See Curtis, A. H.: Indications for Surgical Intervention in Pelvic Lesions of Infectious Origin, THE JOURNAL, Oct. 8, 1927, p. 1191.

ASTHMA AND TRAUMA

To the Editor:—I have been trying to find whether or not asthma follows trauma to the chest wall. There is a patient of mine who states that since an injury (he broke three ribs) he has been asthmatic. There has been no change in his mode of living or other cause to which the sudden occurrence of the asthma is ascribable. Please omit name.

M.D., New York.

ANSWER.—Bronchial asthma is generally understood to be an anaphylactic reaction to some foreign protein. It could not come from an injury per se.

TREATMENT OF PHOSPHATURIA

To the Editor:—In this locality I have found several cases of phosphaturia, i. e., alkaline urine with large amounts of amorphous phosphates. The complaints of the patients have varied from true renal colic to backache or slight pains referred to the genito-urinary system. I have tried to render the urine acid and bring the phosphates into solution, but it seems almost impossible to acidify urine of these patients with sodium benzoate. Should mineral acids be used, and in what dosages? What other procedures should be tried? Please omit name and town.

M.D., Minnesota.

ANSWER.—Mineral acids may be administered in this condition, e. g., diluted phosphoric acid in doses of from 1 to 2 cc. or even more if required, given well diluted with at least half a tumblerful of water after the noon and evening meals. Sodium biphosphate, U. S. P., in doses of from 1 to 4 Gm. every four hours is especially employed for acidifying the urine. The diet should be acid forming and at the same time low in calcium. Such foods are meat and cereals, which should be eaten freely, while other foods, especially milk, eggs and vegetables, which are rich in calcium, should be used as sparingly as good nutrition permits.

DERMATITIS FROM COAL BRIQUETTES

To the Editor:—I have a patient who suffers with papulovesicular itchy spots which resist treatment. He tells me that coal dealers have informed him it was due to the binder in Boulet coal, all their drivers having it. Can you inform me if this is authentic?

M.D., Massachusetts.

ANSWER.—"Boulets" is the trade name under which the coal briquettes manufactured by the Lehigh Coal & Navigation Company are marketed. These briquettes are manufactured by the Dutch process. From 5 to 6 per cent of the briquette consists of hydrolene oil, which is asphaltic pitch. This hydrolene oil serves as a binding medium. This substance has a melting point between 160 and 170 F. However, in briquette manufacture this oil is heated to approximately 250 F. This higher temperature may alter the composition of hydrolene oil.

Hydrolene oil is capable of producing a variety of skin lesions ranging from papulovesicular dermatitis, which are common, to epitheliomas, which are rare from this cause.

DIAGNOSIS AND TREATMENT OF FEVER OF UNDETERMINED ORIGIN

To the Editor:—A woman, aged 51, who had typhoid about twenty-eight years ago and was sick with it and its relapses or recrudescences for seventeen weeks, began to have fever eleven weeks ago. The first two days her temperature reached normal in the morning but thereafter ran rather a typical mild typhoid course, stepping up daily for about a week, then running a plateau for two weeks, then descending by lysis. The blood count (leukocytes) was below 7,000. The differential showed a moderate relative increase of the large mononuclears. The pulse has been relatively slow (from 80 to 90 with a temperature of 102 or 103). The Widal test, taken about the twelfth day, was negative. A blood culture at the same time (temperature 103) was negative. Stool cultures were not made. The urine showed a trace of albumin but no pus. Rose spots were not looked for early. Physical examination has been negative throughout. A tentative diagnosis of paratyphoid fever was made during the second week. Now comes the question. Instead of subsiding, she gets to the point at which her morning temperature is 98 and her afternoon temperature is 99 or 99.2, then slowly rises to a morning 98.6 and afternoon 99.6. For six weeks it has been almost predictable, as it takes about three or four days for it to rise and the same to fall regardless of diet or sitting up an hour or so. Physical examination remains negative and she feels well and looks well and appears to have gained weight. Is there any authoritative justification for my giving her triple typhoid vaccine with the hope of producing a reaction? Would there be any danger? What dosage should be used if it is recommended? She has been seen by a good consultant, who agreed that her lungs were normal and who suggested that the diagnosis lay between typhoid, paratyphoid and bacterial endocarditis. It seems to me that the relatively slow pulse, the leukocyte count and the absence of any cardiac signs or symptoms are against the last diagnosis. Kindly omit my name.

M.D., Georgia

ANSWER.—The diagnosis of the condition cannot be made with any definite certainty without finding a microbic cause by blood, urine or stool culture or by a specific agglutination reaction. While a second infection with typhoid is rare, it has been noted. The absence of a positive Widal reaction or failure to obtain a positive blood culture does not of course rule out typhoid or paratyphoid infection. A persistent search for the organism should be continued. Acute endocarditis cannot be ruled out because neither a low leukocyte count nor a pulse of 80 is necessarily against such a diagnosis. Dr. Libman has frequently called attention to the existence of the bacteria-free stage of subacute bacterial endocarditis. Some of these may be accompanied by embolic phenomena and others are free from these complications. The prognosis in all of these is bad irrespective of the bacterial or bacteria-free state. A search for petechial spots in the lower eyelids, the finger nails or the tips of the fingers or even the retina may be fruitful of corroborative information. Within the last year THE JOURNAL reported a large series of cases in which a low white count was found. Tuberculosis in some unrevealed location may have to be sought for. Sensenich and Giordano (THE JOURNAL, June 2, p. 1782) reported seven cases of *Brucella abortus* infection. These cases may run a course comparable to the one described by our correspondent. A positive blood culture or agglutination test with the causative organism may prove this to be one of the not rare but rarely described infections.

While doses of triple typhoid vaccines, beginning with 3,000,000 dead organisms given intravenously and increased by doubling the dose, may prove harmless, still there are two reasons for not using it. Vaccines used indiscriminately have no place in therapy. There is certainly no indication for them here. Secondly, vaccines produce untoward results at times. Severe reactions are not playthings. Renal complications may leave permanent results.

DIAZO REACTION FOR INDICAN IN BLOOD—HEWITT'S MODIFICATION

To the Editor:—Kindly publish Hewitt's modified diazo reaction used as a test for indican in the blood serum.

Max Schoenbaum, M.D., Richmond, Va.

Answer.—In The Journal, April 29, 1916, p. 1419, under Queries and Minor Notes, appeared an item, entitled "Indican in the Blood," in which methods of Dorner, Haas and Tschertkoff were mentioned. Hewitt's modification, as given by Drs. Harry Blotner and Reginald Fitz (The Diazo Test in Nephritis, The Journal, March 26, 1927, p. 985), is quoted herewith:

We have performed the diazo reaction in a series of cases, using the method described by Hewitt, the details of which are as follows: To 1 cc. of blood plasma or serum is added 2 cc. of 96 per cent alcohol. The proteins are allowed to precipitate, and the mixture is filtered or centrifugalized. The clear filtrate, or supernatant fluid from the centrifugalized specimen, is then collected. To 1 cc. of this clear fluid is added 0.5 cc. of alcohol and 0.25 cc. of freshly prepared diazo reagent. The mixture is boiled for thirty seconds, and then a few drops of a 10 per cent solution of sodium hydroxide are added.

The characteristic reaction is the very rapid development of a pink color, which may disappear rapidly. The intensity of the color and the rate of its disappearance depend on the concentration of the substance causing the reaction in the blood. The mixture must be watched very carefully during the addition of the alkali, since the pink may appear and disappear within a few seconds. The diazo reagent can be prepared according to the directions of McNee. It consists of a mixture of two solutions, each of which keeps well, but which must always be freshly made immediately prior to a test. The two solutions are prepared in the following fashion:

Solution A: sulphanilic acid, 1 cc.; concentrated hydrochloric acid, 15 cc.; distilled water, 1,000 cc.

Solution B: sodium nitrite, 0.5 Gm.; distilled water, 100 cc.

The reagent as used for the test consists of 25 cc. of solution A, to which is added 0.75 cc. of solution B.

As can be seen, the test is simply performed, it takes but little time for its completion, and it requires comparatively little apparatus.

A recent article which deals with the substance responsible for the color change and in which Hewitt's suggestion on this point is discussed is the following:

Harrison, G. A., and Bromfield, R. J.: The Cause of Andrewes's Diazo Test For Renal Inefficiency, Biochem. J. **22**: 43, 1928.

TREATMENT OF SPRAIN—USE OF MAGNESIUM SULPHATE IN HYDROTHERAPY

To the Editor:—1. In cases of so-called sprains of the foot and ankle, in which there is present heat, pain, tenderness and swelling, is there better treatment than to keep the parts continually in a water solution of sodium salicylate and magnesium sulphate, of about the strength of 20 grains of the sodium and 60 grains of the magnesium to the ounce? 2. Does the sodium salicylate aid the penetration of the magnesium sulphate? 3. Is there danger of getting into the system in that way too much magnesium sulphate?

James L. Tracy, M.D., Toledo, Ohio.

Answer.—1. Yes, after swelling has subsided, the joint should be strapped with adhesive plaster; or, if there is considerable swelling, by means of a compression bandage applied over a thick padding of cotton. Movement of the muscles of the joint, but not subjecting it to weight bearing, are the next most important items. Massage is also of advantage.

2. No.

3. No.

BUGLEWEED, FRAGRANT SUMAC AND DIABETES

To the Editor:—Have you any record of cures in diabetes being effected by the use of bugleweed; also any by the use of fragrant sumac? Would bugleweed have any bad effect on the heart, such as shrinkage of the valves or muscles? What is the usual dosage and over what length of time may it be given in both remedies? Have you any record of cures in diabetes outside of insulin and without the aid of diet?

Hallie Warn, M.D., New Albany, Ind.

Answer.—No reliable records of cures of diabetes by bugleweed (*Lycopus virginicus*) or fragrant sumac (*Rhus aromatica*) are at hand. Twenty years ago, Fyfe (Specific Diagnosis and Medication, Cincinnati, Scudder Brothers Company, 1909) quoted one case of diabetes supposedly cured by fragrant sumac, in a manner typical of incomplete, insufficient and uncritical clinical reporting, and ascribing to a medicine results that, in all probability, would have been attained without it. Ellingwood (American Materia Medica, Therapeutics and Pharmacognosy, 1915) also credits bugleweed with curative properties in diabetes mellitus, but the same author in the same book ascribes similar virtues to several other "yarbs."

Bugleweed does not cause shrinkage of the valves of the heart. The fluidextract of lycopus is given in doses of from 1 to 20 drops every hour until the desired slowing of the pulse is obtained. The fluidextract of rhus aromatica is given in doses of from 5 to 30 drops every three or four hours. It is not probable that a well established case of diabetes mellitus is completely cured even with the aid of insulin and diet. Improvement may occur; but a patient who has definite diabetes mellitus (as differentiated from glycosuria) has a crippled pancreas that is not likely to recover normal capacity. The urine of such patients remains sugar-free under appropriate treatment for an indefinite number of years; but a test of their carbohydrate tolerance readily reveals their more or less limited power to assimilate carbohydrate.

POTASSIUM THIOCYANATE—STAINING VINCENT'S ORGANISM

To the Editor:—1. What is the dose of potassium thiocyanate? Is it as poisonous as sodium thiocyanate? In what book can I get any information regarding the former preparation? 2. Please describe a process for staining the organisms of Vincent's angina. Please omit name.

M.D., Massachusetts.

Answer 1.—There is no difference in the dose and action of these two salts, as they dissociate into the thiocyanate and the metal ions; and sodium and potassium ions are practically equivalent on peroral administration, while the thiocyanate ion is the active constituent ion. A dose of 1 gram daily is considered maximal. They are discussed in Torald Sollmann's "Pharmacology," published by W. B. Saunders Company.

2. Before smears are made to be stained for the spirochetes and fusiform bacilli characteristic of Vincent's angina, the surface of the lesion should be cleaned gently by swabbing so as to remove as many as possible of the saprophytic bacteria that are present and that may obscure the characteristic picture. Diluted formaldehyde-gentian violet solution makes a very satisfactory stain. This stain consists of a solution of formaldehyde (1 part of solution of formaldehyde, U. S. P., to 20 parts of water), 75 parts, and saturated alcoholic solution of gentian violet, 25 parts. Methyl violet or crystal violet may be substituted for gentian violet. The Vincent organisms stain satisfactorily also with Giemsa's stain, which should be bought ready prepared. Smears are fixed first in absolute alcohol for fifteen minutes. Ten drops of Giemsa's stain is added to 10 cc. of faintly alkaline distilled water (1 drop of a 1 per cent solution of potassium carbonate to 10 cc. of water), and the fixed smear is immersed on edge in this diluted stain for from one to three hours or longer, followed by rinsing in distilled water, drying and mounting.

SINGLE INJECTION PROPHYLAXIS OF RABIES

To the Editor:—In Queries and Minor Notes, (The Journal, April 21, p. 1312), you speak of the single injection prophylaxis of rabies. I have been giving my dog each year a single dose prophylactic injection, but if this single dose is not dependable, I wish to change. You speak of a course of three injections of a glycerophenolated rabies vaccine. If this method is effective, kindly advise me. Also advise who manufactures the three dose vaccine for rabies.

Frank A. M. Bryant, M.D., Mount Vernon, N. Y.

Answer.—Experimental work conducted by the Bureau of Animal Industry to date with the single injection vaccine indicates that vaccination does not regularly protect dogs against later infection with rabies virus, at least against artificial exposure. In some experiments the vaccine appeared to offer a considerable degree of protection, while in other experiments little protection was afforded vaccinated dogs.

These observations seem to be borne out by field results. Instances of the failure of the vaccine to protect dogs against the disease in the field have been reported. On the other hand, good results are also reported, especially in controlling outbreaks of the disease. In many of these cases, however, other measures, as licensing, destruction of stray dogs and quarantine, are also more or less vigorously enforced, so that the exact part played by vaccination in controlling the disease, other than as a means of bringing these other factors into play, is often obscured.

It is generally held that a stronger immunity is produced by repeated injections of vaccine than that produced by the administration of a single dose. It has been the custom of some, when repeated injections of vaccine are desired, to give the desired number of injections of the single dose vaccine.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 4. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD FOR OTOLARYNGOLOGY: New York, Oct. 11. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

COLORADO: Denver, Oct. 2, 1928. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver, Colo.

CONNECTICUT—Healing Arts (Basic Science): New Haven, Oct. 13. Address—State Board of Healing Arts, Box 1895, Yale Station, New Haven, Conn.

GEORGIA: Atlanta, Oct. 9-10. Sec., Dr. B. T. Wise, Americus, Ga.

IDAHO: Boise, Oct. 2, 1928. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise, Idaho.

ILLINOIS: Chicago, Oct. 2-4, 1928. Supt. of Registration, Mr. V. C. Michels, Dept. of Regis. and Edu., Springfield, Ill.

KANSAS: Topeka, Oct. 9. Sec., Dr. Albert S. Ross, Sabetha, Kan.

MICHIGAN: Lansing, Oct. 9-11. Sec., Dr. Guy L. Connor, 707-708 Stroh Bldg., Detroit, Mich.

MINNESOTA — Basic Science: Minneapolis, Oct. 2, 1928. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., U. of Minn., Minneapolis, Minn.

MONTANA: Helena, Oct. 2-4, 1928. Sec., Dr. S. A. Cooney, Power Block, Helena, Mont.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts 1 and 2, at all class A schools, Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, N. E. Cor. 15th and Locust Sts., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 13-14. Sec., Dr. Charles Duncan, Concord, N. H.

NEW MEXICO: Santa Fe, Oct. 8-9. Sec., Dr. W. T. Joyner, Roswell, New Mex.

NEW YORK: New York, Albany, Syracuse and Buffalo, Sept. 17-20. Chief of State Department of Education, Mr. H. J. Hamilton, Educational Bldg., Albany, N. Y.

OKLAHOMA: Oklahoma City, Sept. 11-12. Sec., Dr. J. M. Byrum, Shawnee, Okla.

PORTO RICO: San Juan, Sept. 4. Sec., Dr. D. A. Biascoechea, Box 804, San Juan.

RHODE ISLAND: Providence, Oct. 4-5. Sec., Dr. B. U. Richards, State House, Providence, R. I.

WISCONSIN: Basic Science Board, Madison, Sept. 15. Sec., Prof. R. N. Bauer, 3410 Wisconsin Ave., Milwaukee.

New York January Examination

Mr. H. J. Hamilton, Chief of the New York Department of Education, reports the written examination held at Albany, Buffalo, New York and Syracuse, January 23-26, 1928. The examination covered 9 subjects and included 10 questions in each subject. An average of 75 per cent was required to pass. Of the 191 candidates examined, 146 passed and 45, including 2 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Arkansas School of Medicine		(1927)	1
University of Colorado School of Medicine		(1925)	1
Yale University School of Medicine		(1924) 1, (1925) 1, (1926) 1, (1927) 2	5
Georgetown University School of Med		(1926) 1, (1927) 1	2
George Washington University Medical School		(1924) 1, (1925) 2, (1926) 1, (1927) 2	6
Howard Univ. School of Med.		(1923) 1, (1926) 3, (1927) 2,	6
Emory University School of Medicine		(1925) 1, (1926) 2,	3
University of Georgia Medical Department		(1924)	1
Loyola University School of Medicine		(1925)	1
Northwestern University Medical School		(1927)	2
Rush Medical College		(1925) 1, (1926) 1, (1927) 1,	3
University of Illinois College of Medicine		(1926)	1
University of Kansas School of Medicine		(1926) 1, (1927) 1,	2
University of Louisville School of Medicine		(1927)	1
Johns Hopkins University School of Medicine		(1924) 2, (1925) 2, (1926) 1, (1927) 2,	7
University of Maryland School of Medicine and College of Physicians and Surgeons		(1927)	3
Boston University School of Medicine		(1927)	2
Harvard University Medical School		(1926) 1, (1927) 2,	3
Tufts Coll. Med. Sch.		(1922) 1, (1923) 2, (1926) 3, (1927) 1,	7
University of Michigan Medical School		(1923) 1, (1927) 1,	2
St. Louis University School of Medicine		(1927)	3
Washington University School of Medicine		(1924)	2
University of Nebraska College of Medicine		(1925)	1
Columbia Univ. Coll. of Phys. and Surgs.		(1924) 1, (1927) 3,	4
Cornell University Medical College		(1926) 1, (1927) 1,	2
New York Homeopathic Med. Coll. and Flower Hosp.		(1927)	1
Syracuse University College of Medicine		(1927)	3
University and Bellevue Hosp. Med. Coll.		(1925) 1, (1927) 2,	3
University of Buffalo School of Medicine		(1926) 1, (1927) 2,	3
Eclectic Medical College, Cincinnati		(1927)	2
Jefferson Medical College of Philadelphia		(1926)	1
University of Pennsylvania Sch. of Med.		(1918) 1, (1927) 2,	3
Woman's Medical College of Pennsylvania		(1926) 1, (1927) 1,	2
Medical College of the State of South Carolina		(1926)	2
Meharry Medical College		(1927)	1
University of Texas School of Medicine		(1926)	1
University of Vermont College of Medicine		(1925) 1, (1926) 1, (1927) 2,	4
Medical College of Virginia		(1926) 2, (1927) 3,	5
University of Virginia Department of Medicine		(1927)	1
Marquette University School of Medicine		(1926)	1
Dalhousie University Faculty of Medicine		(1923)	1
McGill University Faculty of Medicine		(1903) 1, (1921) 1, (1924) 1, (1925) 1, (1926) 4, (1927) 1,	9
Queen's Univ. Faculty of Med.		(1921) 1, (1926) 3, (1927) 5,	9
University of Alberta Faculty of Medicine		(1926)	1
University of Toronto Faculty of Medicine		(1923) 1, (1924) 1, (1925) 2, (1926) 1, (1927) 2,	7
German University of Prague, Czechoslovakia		(1922)*	1
University of Budapest, Hungary		(1920)*	1
National University of Ireland		(1927)	1
University of Naples, Italy		(1923)	1
University of Warsaw, Poland		(1920)*	1
University of Jassy, Roumania		(1926)*	1
Dragomanov Institute, Russia		(1918)* 1, (1922) 1,	2
University of Kharkov, Russia		(1918)	1
University of Leningrad, Russia		(1921)* 1, (1922)* 1,	2
University of Odessa, Russia		(1919)* 1, (1922)* 1,	2
University of Berne, Switzerland		(1910)	1
American University Medical School, Beirut, Syria		(1927)	1

College	FAILED	Year Grad.	Number Failed
Yale University School of Medicine		(1927)	1
Georgetown University School of Medicine		(1927)	1
Howard University School of Medicine		(1900) 1, (1925) 1, (1926) 2, (1927) 1,	5
University of Georgia Medical Department		(1924)	1
University and Bellevue Hospital Medical College		(1925)	1
University of Buffalo School of Medicine		(1926)	1
Eclectic Medical College, Cincinnati		(1927)	1
Meharry Medical College		(1923) 1, (1925) 1, (1927) 1,	3
Vanderbilt University School of Medicine		(1927)	1
University of Texas School of Medicine		(1926)	1
McGill University Faculty of Medicine		(1925)	1
Queen's University Faculty of Medicine		(1916)	2
University of Toronto Faculty of Medicine		(1917)	1
University of Vienna, Austria		(1923)	1
German University of Prague, Czechoslovakia		(1924)	1
University of Bonn, Germany		(1925)	1
University of Budapest, Hungary		(1921)*	1
University of Naples, Italy		(1916) 1, (1918)* 1, (1922) 1, (1923)* 4, (1923) 4, (1926) 1,	12
University of Pavia, Italy		(1923)	1
University of Pisa, Italy		(1925)	1
Donskey University, Russia		(1919)*	1
Dragomanov Institute, Russia		(1921)* 1, (1922) 1,	2
University of Odessa, Russia		(1922)* 1,	1
University of Madrid, Spain		(1920)*	1
Osteopaths			2

* Verification of graduation in process.

Book Notices

MATTER, ELECTRICITY, ENERGY. The Principles of Modern Atomistics and Experimental Results of Atomic Investigation. By Walter Gerlach, o. ö. Professor, University of Tübingen. Translated from second German edition by Francis J. Fuchs, Ph.D. Cloth. Price, $6. Pp. 427, with 119 illustrations. New York: D. Van Nostrand Company, Inc., 1928.

During the last ten years there has been a stupendous development in our knowledge of the inner structure of matter and the forces operating within matter. Professor Gerlach in his work has succeeded in presenting the fundamentals of atomistics in such a way as to arouse the interest of all students of physical science as well as that of the trained physicist. Mathematical formulation has been dispensed with almost entirely, the reader being referred to original articles for the mathematical discussion of the matters dealt with in this book. Furthermore, the chapters are so developed as to constitute, each in itself, a complete unit, a feature that will appeal to those who may not peruse the work in its entirety but select for themselves such chapters as are of especial interest.

PATHOLOGISCHE ANATOMIE DER TUBERKULOSE. Von P. Huebschmann, o. Professor, Direktor des pathologischen Instituts der medizinischen Akademie in Düsseldorf. Paper. Price, 86 marks. Pp. 516, with 108 illustrations. Berlin: Julius Springer, 1928.

In recent years the pathologic anatomy of tuberculosis has come to take on a new significance. Formerly textual treatment of this subject was limited to a strictly morphologic presentation. Today pathogenesis is in the foreground even in an anatomic consideration. Huebschmann's Pathologic Anatomy of Tuberculosis is a modern book, in which the point of view of development rather than the end-stage of tuberculous lesions is the more stressed. The book is divided into two sections, devoted, respectively, to the general and the special pathologic anatomy of the disease. The first gives an extended consideration of the primary complex, as well as of the generalization forms of the disease, and a thorough exposition of the relation of the morbid anatomy of tuberculosis in relation to previous

infection, the allergic state of the tissues and constitutional variation. The second section, which is the longer of the two, takes up the pathology of the disease by organs. The book is well written, well printed and well illustrated from a histologic point of view. It should appeal to clinicians because of the author's familiarity with the clinical phases of the problems raised. Huebschmann, indeed, calls special attention to the fact that it is only since records have been available of lengthy observation of living patients by modern physical diagnostic and roentgenologic methods that a true understanding of the development of the morbid changes of tuberculosis has become possible.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Volume VI. Sanitation in the United States. By Col. Weston P. Chamberlain, M.C. In the American Expeditionary Forces. By Lieut. Col. Frank W. Weed, M.C. Prepared under the Direction of Maj. Gen. M. W. Ireland, the Surgeon General. Cloth. Price, $3.25. Pp. 1141, with illustrations. Washington: Government Printing Office, 1926.

Military sanitation is the prevention of disease in armies. Some of its specific problems are the trench, the crowded transport, the battle field and camps. One of the first problems after war was declared was the selection of camp sites for the army which was to be mobilized and trained in this country before going abroad. The medical department was not represented on all boards that selected camp sites. Of the sixteen national army cantonments 12.5 per cent (Jackson and Gordon), of the sixteen national guard camps 43 per cent, of the forty-nine aviation corps stations 49 per cent, and about 213 other miscellaneous stations either were selected without reference to the medical department or had no primary medical department inspection before they were selected as camp sites or stations, while some were actually approved in opposition to recommendation of the boards. It is not contended that all camp sites selected without medical advice were poor. Most proved satisfactory from a health standpoint. Camp Funston was rejected by the board; General Wood criticized it severely, yet the camp was established and the difficulties which the board foresaw were partly overcome by the expenditure of money and labor. The Camp Pike site was rejected by the board on account of mosquitoes and malaria. It did not prove to be actually unhealthful, but it required an enormous amount of money to control the mosquitoes. Camp Doniphan was rejected by the board on account of supposed insufficient water. A shortage of water did not actually develop in this camp and sufficient water was obtained at less expense than in many other camps. The supply had the disadvantage of foul odor and taste due to the growth of algae and many actively motile animal forms visible to the eye. These disadvantages were not overcome before the camp was abandoned, but they did not affect the health rate unfavorably. It appears now that the camp sites had relatively little influence on the health of the troops. Camp sanitation has advanced so that practically any site in this country likely to be chosen can be made healthful, provided money and labor are available. Medical service in selecting camp sites is of more advantage to the government, therefore, in saving time and money than for assuring health conditions.

The general plan for housing troops was to place drafted men in cantonments and the national guard in tent camps. General Gorgas was much concerned with ventilation in these cantonment buildings. The original plans for some buildings provided as little as 30 square feet of floor space and 230 cubic feet of air space per man. Changes, of course, were recommended by the medical department to increase these allowances, and in another set of plans 374 cubic feet of air space was allowed. The surgeon general still considered this too small and on his suggestion the secretary of war appointed a medical board to examine the housing plans for cantonments. This board reported, June 14, 1917, two grave sanitary defects in the plans. It pointed out (1) that the amount of cubic air space per man was lower than would be permitted in any prison in the United States and lower than the standards established by law in common lodging houses, and (2) that the number of men in each building was too great. The board also disapproved double-deck beds and regarded the bathing facilities inadequate. The quartermaster general of the army was directed by the secretary of war to put into effect the recommendations of the board as far as the work would permit. The change made gave each man 530 cubic feet of air space and about 55 square feet of floor space, although this varied according to circumstances. In general, the bathing facilities provided for camps were excellent. The toilets in the cantonments conformed to the type found in the ordinary home. At first the excreta of the national guard camps was disposed of in pit latrines, but a sewer system for these camps was ultimately authorized. There was little intestinal disease during the war and such as occurred could not be traced to pit latrines; nevertheless, experience indicated that it is poor policy and false economy to use a pit system in a large camp.

Following an inspection of camps by General Gorgas in 1917, he recommended the establishment of observation camps for the purpose of segregating new arrivals for a short period. Eventually Congress appropriated funds for the construction of thirty-two detention camps and thirty-two quarantine camps, but only about eight were authorized before the armistice.

The ration is a most important factor in army sanitation. Troops carried abroad on navy transports were fed the navy ration, and those carried on British transports were fed on an English scale of ration. Nutritional surveys were constantly being made by qualified officers. These groups reported on 227 messes up to early in 1918. The total energy value of the proposed training ration was 4,243 calories, more than enough for a training camp, even after allowing 7 per cent for waste and providing a margin for saving. A change was made in the system of buying which was unsatisfactory in the hospitals. It required that all food be purchased through the quartermaster and that there be no savings. The surgeon general opposed the change. However, the savings principle was eleminated and purchases were made by the quartermaster only. The difficulties this caused led to other changes in December, 1919, and the ration savings principle was again authorized. In designing water works for camps, the war department decided on a daily consumption of 55 gallons per capita. Altogether, the army undertook 275 water supply projects. The government had to rebuild a number of municipal plants and to take over the operation of a few. Twenty-eight of fifty big camps were supplied with water from surface sources, fifteen used large streams or rivers, nine, small streams or creeks, and four employed impounding reservoirs. All of these twenty-eight stations except three had rapid sand filters and disinfecting equipment. No great reliance was placed on filters, and chlorine was used for every surface water supply as well as for ground water supplies of defective quality.

The garbage disposal plan finally adopted at the national army camps consisted in the separation of the garbage in the kitchens into classes and its delivery to contractors at a central station with the camp. Civilian contractors took all organic waste to a point beyond the reservation. These contractors established piggeries near some camps. Grease, raw meats and dead animals were rendered in plants operated by the contractors; bones were sold to fertilizer companies; dry bread was made into poultry feed, and the worthless refuse, consisting of coffee grounds, tea leaves and citrus rinds, were incinerated usually in plants operated by the government. Paper, tin cans and bottles were baled and sold. Manure was hauled to a safe distance from camp and spread on land. In the national guard camps, prior to the installation of their sewer systems in 1918, kitchen slops were evaporated in shallow pans placed over an incinerator. The means used to dispose of garbage and other camp refuse are illustrated in this volume.

Malaria control work, with few exceptions, was excellent. A table is presented to show the number of cases occurring at each station, but the medical department did not keep a record of cases which were of local origin and of those in which there was a previous history of malaria. It is difficult, therefore, to state the total number of cases of malaria which actually originated in each camp. It was demonstrated that malaria can be controlled anywhere in camps in this country if there are sufficient funds and labor. However, the selection of a camp site in a malaria country is not justified when another site equally suitable is free from malaria. Camp Beauregard was a bad location on account of malaria. It heads the list of camps having the greatest number of cases.

The first authentic case in the epidemic of influenza in the United States occurred at Camp Devens, Mass., Sept. 8, 1918. There were about 45,000 men in the camp; by September 26,

12,000 cases of influenza had been reported. The section on the epidemic consists largely of instructions issued by the surgeon general's office and the war department, and of recommendations by boards of officers as to what should be done. Some of the most interesting parts of the chapter are cables from France. One of Oct. 11, 1918, states that the *Leviathan* had arrived with 366 cases of pneumonia on board and 597 of influenza; there had been eighty-five deaths en route and six patients were moribund. Another from France, dated October 9, stated that the *Louisville* had arrived with 500 cases of influenza, and that there had been thirty-two deaths en route and eighty-two after arrival. Another, dated October 8, shows the convoy arriving at Liverpool with 21,000 men, 606 cases of influenza and pneumonia and eighty-eight deaths en route. Another, October 29, shows the *Olympic* arriving at Southampton with 5,430 men, thirty-four cases of influenza and no deaths; mouth and nose masks were worn day and night, the cablegram states, and 1 per cent of iodine in liquid petrolatum was used as sprays. Cables from General Pershing emphasized the seriousness of the epidemic and the immediate need for medical department personnel and equipment.

The louse problem became important in May, 1918, in consequence of a complaint from the American Expeditionary Forces that about 50 per cent of the men arriving had lice. An investigation was made immediately. In Camp Meade, for example, it was found, that 3.5 per cent of the white drafted men had lice and 26 per cent of the negroes. A program to combat lice was formulated and plans were made to erect large delousing plants. None of these large plants, however, were ready until after the armistice. In the meantime, the chief method used to destroy vermin was live steam in small camp delousing units. This chapter is well illustrated. There are chapters on the physical examination of drafted men, but that subject has been written about so much as not to require further comment. This volume contains also specific directions for the prevention of infectious disease and reports of sanitary inspectors. It is of great value as a historical document.

LEHRBUCH DER ALLGEMEINEN PATHOLOGIE UND DER PATHOLOGISCHEN ANATOMIE. Von Professor H. Ribbert. Neu bearbeitet von Dr. Carl Sternberg, Professor für pathologische Anatomie an der Universität in Wien. Paper. Price, 45 marks. Pp. 727, with 739 illustrations. Leipzig: F. C. W. Vogel, 1928.

The textbook by Birch-Hirschfeld on general pathology and special pathologic anatomy written about forty years ago was extensively used for many years. It had a number of editions and was revised by Ribbert after Birch-Hirschfeld died and by Mönckeberg after the death of Ribbert. And now with Mönckeberg also dead, Sternberg was finally pursuaded to continue the task of these illustrious predecessors. The character of the work as Ribbert maintained it is preserved, although it is largely rewritten. Many alterations planned by Mönckeberg have been made by Sternberg. Smaller type has been used in many places, so that the size is not materially greater even though there are sixty new illustrations. The illustrations are excellent and especially valuable since many are of gross morbid anatomy. Although the consideration given many subjects is exceedingly sketchy, the work is somewhat better than a student's manual. The only references are to a few of the more elaborate tetxbooks in which bibliographies may be found. In some respects the work is narrow. A certain Viennese provincialism is evident in statements casting doubt on conclusions repeatedly obtained from careful investigations of some forms of disease with which European pathologists have had little experience. This is also evident in the failure to mention new information obtained through American research of some pathologic processes common to all countries. These defects should be remedied because students of medicine and physicians the world over in rapidly increasing numbers are becoming discerning and critical about textbooks in foreign languages. Where German is the prevalent language and among students elsewhere whose command of German is excellent, this single volume will be found highly useful for such routine information in pathology as is generally required. In meeting such essentials, it is easily the equal of any of the textbooks in English, and certainly better than some. The requirements for entrance to medicine are high. Included with those who have simply the usual college degrees are many who also have obtained a Ph.D. For these better students this briefer text on the important branch of medicine with which it deals will not suffice, or it will be employed as an introduction.

THE NEWER KNOWLEDGE OF BACTERIOLOGY AND IMMUNOLOGY. By Eighty-Two Contributors. Edited by Edwin O. Jordan and I. S. Falk. Cloth. Price, $10. Pp. 1196, with illustrations. Chicago: University of Chicago Press, 1928.

In few fields of medical science has progress been so rapid and so complicated as in bacteriology. Hence the need of a modern brief system of the character of that embraced by this volume. There are eighty-three chapters in the volume, supplemented by adequate author and subject indexes. Significant of the character of the discussion is the fact that Dr. John Churchman writes on the staining reactions of bacteria, Roger G. Perkins on classifications, Kendall on carbohydrate and Rettger on protein metabolism of bacteria, Norton on water bacteriology, Noguchi on the spirochetes, Jordan himself on food poisoning, Falk on microbic virulence, and Rosenow on elective localization. Indeed, a consideration of the chapters and of the men who have written them is practically a selection of those who have done most important research in each subject. The editing of the volume has been beautifully worked out so that unnecessary duplication and overlapping have been avoided. On the other hand, where differences of opinion have existed, authors have been permitted to maintain their own points of view. The present work, type and style are quite up to the quality of other volumes issued by the University of Chicago Press. Here is no mere textbook of bacteriology, no heavily padded consideration, but instead a complete consideration of all that bacteria mean to life, contributed by men who have mastered special phases of a highly special subject.

MUTATIONSTHEORIE DER GESCHWULST-ENTSTEHUNG. Uebergang von Körperzellen in Geschwulstzellen durch Gen-Aenderung. Von Dr. Med. K. H. Bauer, a. o. Professor für Chirurgie an der Universität Göttingen. Paper. Price, 3.90 marks. Pp. 72, with 4 illustrations. Berlin: Julius Springer, 1928.

Evidences from new studies are not presented with this attempt to correlate the results of studies in genetics with cancer research. The abnormal chromosome relations and other peculiarities of nuclear division of tumor cells are regarded as evidence of mutation. Before modern studies of heredity had begun, and before the work of DeVries, Boveri had suggested the relation between these variations in chromosomes and tumor genesis, and on them the anaplasia of Hansemann was largely based. That a marked diversity occurs in tumors because of their development at different periods in the life of the individual, and that the process is irreversible, tumor tissue never undergoing a retrometamorphosis to normal tissue, are also regarded as supports for the thesis. The importance of external irritation is fully recognized, but gene modification is considered as primary. As examples of familial diseases with which tumors frequently are observed, multiple exostoses, multiple polypi of the stomach and bowel, and xeroderma pigmentosum are mentioned. The evidence favoring the share mutation plays is well arranged and entertaining reading. It is by no means complete; for example, the high incidence found by Warthin of cancer in many generations of a few families should be included. The work is another of the indications now fairly common that tumor growth is a systemic disease with localized proliferation of tissues.

PRACTICAL CLINICAL PSYCHIATRY FOR STUDENTS AND PRACTITIONERS. By Edward A. Strecker, A.M., M.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia, and Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado Medical School. Second edition. Cloth. Price, $4. Pp. 458, with 30 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

This eminently sensible and well written treatise on psychoses and psychoneuroses is excellent for students and should be welcome to the practitioner who wishes to learn just what he needs to know about these conditions. The reader is taught good methods of examination and the essentials about the symptoms, pathology and treatment of the various diseases and syndromes. Excellent case records illustrating all these diseases form a large part of the book. The good sense of the authors is illustrated by their directions for methods of approach in the psychoneuroses. After enumerating a large variety of physical ailments actually encountered in these functional cases, they

say (p. 349): "It is *not* a question as to what degree these pathological conditions were instrumental in producing a neurosis or even whether they were influential at all. Such morbidity is to be found on careful examination and *therefore careful examination becomes a matter not of belief but of conscience and medical ethics.* Adherence to any particular doctrine does not remove the responsibility for determining the actual physical status of the patient. The only effective knowledge is the kind of knowledge that is derived from a thorough analysis of the patient, his symptoms, his history and his setting in life—a psychologic analysis—a physical analysis and an environmental analysis. There is no royal road nor are there any short-cuts to a proper understanding of the neuroses."

LA VIE, LA MALADIE ET LA MORT. Phénomènes colloïdaux. Par Auguste Lumière. Paper. Price, 45 francs. Pp. 520, with 55 illustrations. Paris: Masson & Cie, 1928.

This volume is of importance only because it adds another name to the now long list of propagandists for a colloid point of view in matters biologic and because any such book is likely to win additional recruits for the cause. Lumière has written of colloid chemistry and seems to have discovered the field for himself only within the last few years. The thesis of this monograph is that living substance is colloid, that changes in colloids produce flocculation, and that such flocculation in biologic material means disease and death. Lumière's writing serves, therefore, in the proper placing in the scientific cosmos of certain problems in pathology. This view is correct but by no means new. The author's introductory pages on colloids are vague if not actually wrong. As so commonly he applies the classic notions of the lyophobic colloids to the lyophilic, finds that the two cannot be made identical, accepts, rejects and then sets up a "micelle" hypothesis of his own for the latter—an hypothesis which has no foundation in the facts of colloid behavior—and with this plunges into his biologic material. The subjects handled run from skin eruptions to immortality—a range likely to frighten an ordinary scientific reader, though not a colloid chemist, had better caution been followed in the bringing of scientific proofs. Most space is devoted to the idea that flocculations may occur (*a*) within the blood stream and (*b*) in the cells. Through the former may then be understood anaphylactic and all the other forms of shock with all their various signs and symptoms in the different systems of the body. But has not intravascular clotting long been held to be responsible for at least much of this? Through the latter an "explanation" is given of the pathologic changes visible in cells. But have the pathologists not long held various "degenerations" and "necroses" to be the expression of "coagulations"? To call these things "colloid" does not help us along the road. What is wanted now is an analysis of the mechanisms by which in living matter the "flocculations" are brought about, and of this Lumière tells us nothing. Books make agreeable reading which content themselves with a straight statement of what an author believes and which leave it to the reader's own knowledge of the field as to what is new and what is not. But Lumière could have found many of his problems solved for him if he had considered or known Hofmeister, Pauli, Spiro, Bordet, Picton, Linder, Wolfgang Ostwald, Wilhelm Ostwald, Paltauf, Pick, Oker-Blom, Landsteiner, Biltz, Arrhenius or Madsen—just to mention the wheelhorses of the colloid-chemical point of view in physiology and pathology.

A HANDBOOK OF HISTOLOGY. By A. McL. Watson, M.A., Ph.D., Lecturer on Histology, University of Glasgow. Cloth. Price, $3.75. Pp. 207, with 52 illustrations. New York: William Wood & Company, 1928.

This is a greatly condensed outline of the histology of mammalian tissues and organs. It is exceptionally well written, although in some cases the condensation has been carried so far as to given the student wholly erroneous ideas. There are good illustrations from low power photomicrographs. A plate with characteristic sections taken at various levels of the intestine, shown side by side, is particularly instructive. The chapter on the nervous system is supplemented by diagrams and charts of the most important conduction paths of the brain stem and spinal cord. A course in histology such as is here outlined might enable a student to pass a stereotyped examination, but it would hardly play the part in the medical curriculum which it should play; namely, to illuminate the physiology of the various organs by analyzing their functions in terms of cell types as well as in terms of tissues, to emphasize such features of their activity as are brought out by their minute structure, and also to give a glimpse into the methods of extending our knowledge which are characteristic of this science.

KONSTITUTIONSPATHOLOGIE IN DER ORTHOPÄDIE. Erbbiologie des peripheren Bewegungsapparates. Von Dr. Berta Aschner, und Dr. Guido Engelmann. Paper. Price, 28 marks. Pp. 312, with 80 illustrations. Vienna: Julius Springer, 1928.

This monograph is interesting and instructive. The subject is well presented and in proper sequence. It emphasizes congenital defects of the extremities. The illustrations are well chosen and well executed. There are many family charts given. The bibliography is complete so far as the German literature is concerned, but other European writers are scarcely mentioned. Almost no American writers are referred to, and one is surprised to note the omission of such names as Legg, Freiberg and Osgood in the discussion of conditions originally described by these men.

TUBERCULOSIS: ITS PREVENTION AND HOME TREATMENT. A Guide for the Use of Patients. By H. Hyslop Thomson, M.D., D.P.H., County Medical Officer of Health for Hertfordshire. Third edition. Cloth. Price, 75 cents. Pp. 99, with illustrations. New York: Oxford University Press, 1928.

This is a compend of instructions to the tuberculous patient. It offers, naturally, nothing new, but is correct in its subject matter. It seems to be rather too condensed; nevertheless, its careful study might be of advantage to the invalid.

THE CLINICAL STUDY OF MENTAL DISORDERS. By Lt.-Colonel J. R. Lord, C.B.E., M.D., F.R.C.P. Cloth. Price, 6/-net. Pp. 82. London: Adlard & Son, Ltd., 1926.

This little book, containing the presidential address delivered at the eighty-fifth annual meeting of the Royal Medico-Psychological Association in London, July 13, 1926, gives an excellent review of the evolution of psychiatry from the phases of simple observation and description to the phase of the dynamic conceptions of modern times. The key-note of the book is the emphasis laid on the need for team work in clinical psychiatry through which a reunion between general medicine and psychiatry will eventually be completed. The meaning of the study of mental diseases and its practical application in the treatment of patients is admirably illustrated and no one can read the book without gaining a clearer insight into the nature and the aims of psychiatric science. The method of presentation is clear, simple and direct; the book can be recommended heartily to the general physician as well as to the student of psychiatry.

TRAITÉ D'ÉLECTROCARDIOGRAPHIE CLINIQUE. Par Paul Veil, assistant du Docteur Gallavardin à l'Hôtel-Dieu de Lyon, et Juan Codina-Altès, professeur agrégé à la Faculté de médecine de Barcelone. Préface de L. Gallavardin, médecin de l'Hôtel-Dieu de Lyon. Paper. Price, 95 francs. Pp. 447, with 208 illustrations. Paris: Gaston Doin & Cie, 1928.

In this volume the clinical aspects of the cardiopathies are made secondary to theoretical considerations. The authors have included historical data which have been all important for the development of modern conceptions of the mechanism of abnormal rhythms. The first few chapters cover in an orthodox fashion a good general description of the electrocardiographic method. Professor Cluzet, one of the collaborators, has contributed a chapter in which he treats of the significance of electrocardiographic deflections; the pros and cons as to whether deflections are synchronous with impulse conduction or contractile processes are the basis of discussion here. A finer treatment of the extrasystole cannot be found in any other single volume on the subject. This is the most valuable contribution. The current theories of Lewis and Rothberger are amply treated and the latter as a collaborator has contributed a chapter on the parasystole. The book is well illustrated and there is an abundance of clinical and experimental curves. The increasing application of the electrocardiographic method and the impetus given to cardiology by clinical research during the past decade render the short, popular and so-called practical outline in electrocardiography insufficient for the student in this field. The need at this time for so excellent a treatise as this is therefore obvious.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

HANDBUCH DER SOZIALEN HYGIENE UND GESUNDHEITSFÜRSORGE. Herausgegeben von A. Gottstein, A. Schlossmann, und L. Teleky. Band IV: Gesundheitsfürsorge soziale und private Versicherung. Von L. Ascher, H. Behrendt, H. Dersch und anderen. Band V: Soziale Physiologie und Pathologie. Von R. Allers, A. Beythien, A. Czellitzer und Anderen. Paper. Price, 63 marks and 57 marks. Pp. 874, with 42 illustrations, and pp. 807, with 77 illustrations. Berlin: Julius Springer, 1927.

Parts of a great system of social hygiene and preventive medicine, these portions dealing with schools, children, childbirth, sex hygiene, housing, occupation, etc.

FORENSIC MEDICINE. A Text-Book for Students and Practitioners. By Sydney Smith, M.D., D.P.H., Regius Professor of Forensic Medicine, University of Edinburgh. With an introduction by Professor Harvey Littlejohn, F.R.C.S., F.R.S.E. Second edition. Cloth. Price, $8. Pp. 602, with 166 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

New edition of a well established text on legal medicine, with British background.

THE HEART IN MODERN PRACTICE, DIAGNOSIS AND TREATMENT. By William Duncan Reid, A.B., M.D., Assistant Professor of Cardiology, Boston University School of Medicine. Second edition. Cloth. Price, $6. Pp. 466, with 81 illustrations. Philadelphia: J. B. Lippincott Company, 1928.

New edition of a thorough consideration of the heart, with late information on use of the electrocardiograph.

OPUSCULA SELECTA NEERLANDICORUM DE ARTE MEDICA. Fasciculus Septimus quem Curatores Miscellaneorum quae vocantur. Nederlandsch Tijdschrift voor Geneeskunde. Collegerunt et ediderunt Amstelodami Sumptibus Societatis. Cloth. Pp. 334. Amsterdam: Amstelodami Sumptibus Societatis, 1928.

Reprint of an ancient Dutch surgical text.

DIE INDIVIDUALISIERUNG IN DER LUESBEHANDLUNG: Für Aerzte und Studierende dargestellt. Von Dr. Oskar D. Günsberger, Facharzt für Haut- und Geschlechtskrankheiten, Osijek. Mit einem Geleitwort von Prof. Dr. M. Oppenheim. Paper. Price, 2.40 marks. Pp. 60. Leipzig: Franz Deuticke, 1928.

Monograph on therapy of syphilis.

WHAT YOU SHOULD KNOW ABOUT HEART DISEASE. By Harold E. B. Pardee, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical School. Cloth. Price, $1.50. Pp. 120, with 1 illustration. Philadelphia: Lee & Febiger, 1928.

Brief and highly satisfactory guide for the layman who wants to know—and ought to!

SURGICAL OPERATIONS ON PRESIDENT CLEVELAND IN 1893 TOGETHER WITH SIX ADDITIONAL PAPERS OF REMINISCENCES. By William W. Keen, M.D. Cloth. Price, $1.50. Pp. 251. Philadelphia: J. B. Lippincott Company, 1928.

Collected essays, popular and well written, by America's emeritus in surgeons.

FASCIAL GRAFTING IN PRINCIPLE AND PRACTICE. An Illustrated Manual of Procedure and Technique. By H. C. Orrin, O.B.E., F.R.C.S. Cloth. Price, 7/6 net. Pp. 92, with 47 illustrations. Edinburgh: Oliver and Boyd, 1928.

Detailed technic of this special surgical method.

RÉNÉ THÉOPHILE HYACINTHE LAENNEC: A MEMOIR. By Gerald B. Webb, M.D., President, Colorado School of Tuberculosis, Colorado Springs. Cloth. Price, $2. Pp. 146, with 13 illustrations. New York: Paul B. Hoeber, Inc., 1928.

Well written essay on the discoverer of auscultation.

UEBER HODEN, NEBENHODEN UND SAMENSTRANG BEI LEPRÖSEN. Von W. Kobayashi (aus d. IV. Leprosorium zu Oshima). Paper. Pp. 92, with illustrations. Kyoto: Dermatological Institute, Imperial University, 1928.

New Japanese monograph on leprosy.

KLINISCHE UND ÄTIOLOGISCHE FORSCHUNGEN ÜBER „SAFU". Von T. Matsunaga (Direktor des Truk-Hospital, Südsee). Paper. Pp. 77, with illustrations. Kyoto: Dermatological Institute, Imperial University, 1928.

Dermatologic monograph in Japanese and German.

PRESCRIBING OCCUPATIONAL THERAPY. By William Rush Dunton, Jr., B.S., A.M., M.D. Cloth. Price, $2.10. Pp. 142, Springfield, Illinois: Charles C. Thomas, 1928.

Guide to a little known subject by a leader in occupational therapy.

HEALTH! "THE PARAMOUNT ASSET." By George Parrish, M.D., Health Commissioner, Los Angeles. Cloth. Price, $2.50. Pp. 262, Los Angeles: The Author, 1928.

Collected essays of a health commissioner.

ESTUDIOS SOBRE LA HIPÓFISIS Y SILLA TURCA. Por el Dr. Juan Marimón. Paper. Pp. 40, with 18 illustrations. Barcelona, 1928.

Spanish monograph on the hypophysis.

STUDIES ON OXIDATION-REDUCTION. XI. POTENTIOMETRIC AND SPECTROPHOTOMETRIC STUDIES OF BINSCHEDLER'S GREEN AND TOLUYLENE BLUE. By Max Phillips, Associate Chemist; W. Mansfield Clark, Chief of Division of Chemistry, and Barnett Cohen, Chemist, Hygienic Laboratory United States Public Health Service. Supplement No. 61 to the Public Health Reports. Paper. Price 10 cents. Pp. 36. Washington, D. C.: Supt. of Doc., Government Printing Office, 1927.

HEALTH OF WORKERS IN DUSTY TRADES. I. HEALTH OF WORKERS IN A PORTLAND CEMENT PLANT. By L. R. Thompson, Surgeon; Dean K. Brundage, Assistant Statistician; Albert E. Russell, Assistant Surgeon; J. J. Bloomfield, Assistant Physical Chemist. Prepared by direction of the Surgeon General. Public Health Bulletin No. 176. Paper. Price 45 cents. Pp. 138, with 22 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1928.

THE CHILD GUIDANCE CLINIC AND THE COMMUNITY. A Group of Papers Written from the Viewpoints of the Clinic, the Juvenile Court, the School, the Child Welfare Agency, and the Parent. By Ralph P. Truitt, M.D.; Lawson G. Lowrey, M.D.; Judge Charles W. Hoffman; William L. Connor; Ethel Taylor; Fanny Robson Kendel. Paper. Gratis. Pp. 106, New York City: Commonwealth Fund Division of Publications, 1928.

DIE LABYRINTHREFLEXE AUF DIE AUGENMUSKELN NACH EINSEITIGER LABYRINTHEXSTIRPATION NEBST EINER KURZEN ANGABE ÜBER DEN NERVENMECHANISMUS DER VESTIBULÄREN AUGENBEWEGUNGEN. Von Dr. R. Lorente de Nó, Assistent des „Instituto Cajal", Madrid. Paper. Price, 15 marks. Pp. 205, with 208 illustrations. Berlin: Urban & Schwarzenberg, 1928.

PUBLIC HEALTH WORK IN FARGO: An Appraisal. By W. F. Walker, D.P.H., Field Director, American Public Health Association. Part Two of the Final Report of the Fargo Demonstration. Child Health Demonstration Committee, Bulletin, no. 8, May, 1928. Paper. Pp. 24, with illustrations. New York City: Commonwealth Fund Division of Publications, 1928.

TRAITEMENT BIOLOGIQUE (BIOTHÉRAPIE) des infections par les huiles essentielles, les résines (oléorésinothérapie), et par les essences déterpenées, les lipides (oléolipothérapie). Par le Dr. Albert Jentzer, privat-docent de chirurgie à l'Université de Genève. Paper. Price, 80 francs. Pp. 424, with 178 illustrations. Paris: Masson & Cie, 1928.

MELLON INSTITUTE OF INDUSTRIAL RESEARCH. A List of the Books, Bulletins, Journal Contributions, and Patents by Members of Mellon Institute of Industrial Research During the Calendar Year 1927. By Lois Heaton. Paper. Pp. 13. Pittsburgh: Mellon Institute of Industrial Research, 1928.

STUDIES IN PSYCHOLOGY: MEMORY, EMOTION, CONSCIOUSNESS, SLEEP, DREAMS, AND ALLIED MENTAL PHENOMENA. By William Elder, M.D., F.R.C.P.E., F.R.S.E., Consulting Physician to Leith Hospital. Cloth. Price, 8/6 net. Pp. 212. London: William Heinemann Ltd., 1927.

CHEMOTHERAPEUTIC RESEARCHES ON CANCER WITH ESPECIAL REFERENCE TO THE LEAD AND SULPHUR GROUPS. By A. T. Todd, M.B., M.R.C.P., Honorary Assistant Physician, Bristol Royal Infirmary. Paper. Price, 2/6. Pp. 127. Bristol: J. W. Arrowsmith, Ltd., 1928.

FIVE YEARS IN FARGO. Part One of the Final Report of the Fargo Demonstration. Child Health Demonstration Committee, Bulletin, no. 7, May, 1928. Paper. Pp. 51, with illustrations. New York City: Commonwealth Fund Division of Publications, 1928.

Contribución al estudio de la reacción serológica de Muchow y Lewy en la lepra. Por Julio Miró Carbonell, Inspector Municipal de Sanidad. Tesis del Doctorado. Universidad Central.-Facultad de Medicina. Paper. Pp. 71, with 60 illustrations. Alcoy, 1928.

LE REIN EN FER A CHEVAL. Par le Dr. M. Schillings, chef de clinique urologique à l'Hôpital S[t] Pierre. Paper. Price, 11 Belges. Pp. 104, with 34 illustrations. Louvain: Secrétariat de la Société Scientifique, 1928.

FIFTH REPORT OF THE GOVERNMENT INSTITUTE FOR VETERINARY RESEARCH, Fusan Chosen, Japan. Paper. Pp. 23, with illustrations. Fusan Chosen, Japan: Government Institute for Veterinary Research, 1928.

THREE LECTURES ON NEUROBIOTAXIS AND OTHER SUBJECTS, DELIVERED AT THE UNIVERSITY OF COPENHAGEN. By C. U. Ariëns Kappers. Paper. Pp. 76. Copenhagen: Levin & Munksgaard, 1928.

Medicolegal

Liability for Services Rendered on Wife's Contract

(Chevallier v. Connors. Same v. Young (N. M.), 262 Pac. R. 173)

The Supreme Court of New Mexico says that these two cases involved the question of the liability of a husband for professional services rendered to the wife by a physician. They were submitted to the district court on identical statements of fact, that in the Young case being in part that Mr. and Mrs. Young were, and at all times mentioned had been, living together as husband and wife, and that Mrs. Young employed the plaintiff to perform for her certain professional services at a time when her health was such that the services of a physician were necessary, for which services she agreed to pay the plaintiff, and signed a written promise to pay him $25 for professional services rendered. She paid $5 of the amount, but refused to pay the remainder, as did her husband. The action in each case was brought by the plaintiff against the husband, and judgments were rendered against the defendants, which judgments are here reversed and the causes remanded with direction to enter judgments for the defendants.

The controlling statute was section 2746 of the code of New Mexico of 1915, which reads:

> If the husband neglects to make adequate provision for the support of his wife, except in the cases mentioned in the next section [where the wife has abandoned the husband or is living separate from him by agreement] any other person may, in good faith, supply her with articles necessary for her support, and recover the reasonable value thereof from the husband.

It was not questioned that, if the husband has neglected to furnished the wife needed medical service, the latter has the right to engage it, and a physician has a right to furnish it on the husband's credit. But, as appeared from the stipulated facts, this was not the plaintiff's case. It did not appear that there was any neglect on the part of the husband, or that either the wife in engaging or the physician in furnishing the services intended, the one to bind, or the other to look to the husband's credit. Therefore, the defendants contended, the facts did not support the judgments against them. It was not contended that the statute changed the common-law rule that, in the absence of express or implied authority to make the purchase or engage the service, the wife can bind the husband for necessaries only. There are two implications in the word "necessity." The thing must be necessary not only in its nature but in the sense that a sufficient supply of it is lacking. Consulting the statement of facts, standing here as proof, it was found to be carefully limited, with respect to necessity, to the nature of the thing, and silent as to any lack of it.

The plaintiff contended that the husband, being primarily liable for necessaries furnished to the wife, is not relieved by her promise that she will pay for them. This is a minority doctrine, the general rule being to the contrary. This court thinks the general rule is the better. At common law the wife's personal property passed, at marriage, to the husband, as well as the rents, issues and profits of her real estate, leaving her without ability to pay for necessaries. Moreover, she could not bind herself or her estate by contract. The husband's liability followed as a matter of necessity. These conditions have changed. She may now bind herself, and her estate, for anything she desires to acquire. It may be that if the services had been furnished on the husband's credit, a presumption of liability would have supplied the lack of proof of a failure of the husband to make adequate provision. It may be also that if the only weakness in the case was that the plaintiff had seemed, by the formal contract, to look to the wife's credit, the fact would not have been conclusive against the liability of the husband. However the two questions might be decided if arising separately, when they arise in the same case they have a bearing on each other and must be considered together. When all the evidence shows an extension of credit to the wife, how can the husband be held liable, in the absence of a showing either of neglect on his part to provide the thing, thus rendering it a necessity, or of an original intention to look to him for payment? The credit may have been extended to the wife for the reason that she and the plaintiff knew that the thing contracted for was unnecessary. It may have been extended to the wife because of her greater financial responsibility. If either inference could be drawn, it would no doubt be fatal to the plaintiff's recovery. No necessary inference appeared to support the husband's liability. It seems, therefore, that the facts stipulated did not warrant the judgments against the defendants.

Testimony of Professional Alienist as to Past Sanity

(People v. Mellody (Calif.), 261 Pac. R. 1114)

The District Court of Appeal of California, first district, division 1, in affirming a judgment of conviction of robbery, says that a short time after the commission of this offense the defendant was committed to a detention hospital for the purpose of being examined as to his sanity and later was committed to the state hospital at Stockton, from which institution he escaped. At the trial, a physician who was a professional alienist was called as a witness on behalf of both the defense and of the prosecution. He testified that he had examined the defendant and that the latter was sane at the time of his trial. He further testified that he had not examined the defendant at the time of the commission of the offense, which was almost two years prior thereto. He had, however, made a thorough examination of the case. He had interviewed the defendant and become familiar with the history of his life and his various ailments. Certain hypothetical questions, which included the mode and manner in which the crime was committed, were addressed to this witness, and in response thereto he gave it as his opinion that the defendant was sane at the time he committed the offense. It was contended that this evidence was inadmissible to prove this fact. This court does not think so. The circumstances under which the crime was committed would indicate to a trained mind whether the perpetrator was conscious of the wrongful nature of the act committed. Whether the accused was legally responsible at the time he committed the act was a question of fact for the jury to determine, as was also the weight of the evidence.

The further point was urged that the court erred in denying the defendant's motion for a new trial. The motion was based on newly discovered evidence as to the mental condition of the defendant at the time of his arrest. Such motions are addressed to the sound discretion of the court, and, in the absence of abuse, the determination of the trial court will not here be disturbed.

Presumed Purchase of Morphine—Comment on Statute

(Casey v. United States (U. S.), 48 Sup. Ct. R. 373)

The Supreme Court of the United States, in affirming a judgment which sustained a conviction of defendant Casey on a count of an indictment which charged him with the purchase of 3 1/10 grains of morphine not in or from the original stamped package, says, in an opinion delivered by Justice Holmes, that the defendant had practiced law for many years, had been in the habit of visiting the county jail, and had defended prisoners addicted to the use of narcotics. There was evidence tending to show that on different occasions he had promised to furnish them with opiates, and that in pursuance of such promises and for pay received by him he had given or sent to them preparations of morphine, concealed, it was said, by soaking towels or the like in a solution of the drug. If this evidence was believed it showed that he was in possession or control of what he sent and it may safely be inferred that he did not proclaim his illegal purpose by putting stamps on the towels. But the charge was a purchase, not a sale. There was no testimony directly concerning the purchase and the government relied in part at least on the presumption of a violation of section 1 of the act of Dec. 14, 1914, c. 1, as amended by the act of Feb. 24, 1919, c. 18, section 1006, that that section purports to create. The amended section makes the purchase, sale, etc., of opium and derivatives unlawful except in or from the original stamped package, and the absence of the required stamps from any of the said drugs "shall be prima facie evidence of a violation of this section by the person in whose possession same may be found." The statute here talks of prima facie evidence, but it means only that the burden shall be on the party found in

possession to explain and justify it when accused of the crime that the statute creates. It is consistent with all the constitutional protections of accused men to throw on them the burden of proving facts peculiarly within their knowledge and hidden from discovery by the government. In dealing with a poison not commonly used except on a physician's prescription easily proved, or for a debauch possible only by a breach of law, it seems reasonable to call on a person possessing it in a form that warrants suspicion to show that he obtained it in a mode permitted by the law.

The statute is much more obviously a revenue measure now than when *United States* v. *Doremus*, 249 U. S. 86, 39 Sup. Ct. 214, was decided, and is said to produce a considerable return. *Alston* v. *United States*, 274 U. S. 289, 294, 47 Sup. Ct. 634. It is too late to attempt to overthrow the whole act on *Child Labor Tax Case*, 259 U. S. 20, 42 Sup. Ct. 449. It is said also that no opium is produced in the United States, and at all events the statute has been so modified that now at least *United States* v. *Jin Fuey Moy*, 241 U. S. 394, 36 Sup. Ct. 658, does not apply to this case. *United States* v. *Wong Sing*, 260 U. S. 18, 21, 43 Sup. Ct. 7. The court passes as not needing discussion some minor points.

Justices McReynolds, Butler, Brandeis and Sanford dissent.

Malpractice and Statute of Limitations—Chiropractors

(Monohan v. Devinny et al. (N. Y.), 225 N. Y. Supp. 601)

The Supreme Court of New York, special term, Albany County, says that the plaintiff alleged that she employed the defendants to give her chiropractic treatments and that they so unskilfully, negligently and wilfully applied pressure to her spinal column, with such force, as to cause a fracture and collapse of the spine, as a result of which she had become paralyzed. The cause of action was one in tort for the recovery of damages, and not on contract. If this action had been brought against a regularly licensed physician, it would without question be termed an action to recover damages for malpractice, and the statute of limitations of the state of New York, which is two years in the case of malpractice, would apply.

A chiropractor who is not licensed to practice in medicine in the state of New York is unlawfully practicing medicine when he diagnoses ailments of the human body and treats them. The defendants made a motion to dismiss the complaint in this case on the ground that the statute of limitations had barred the plaintiff's cause of action. The plaintiff contended that a chiropractor, having no professional standing under the laws of the state, cannot claim the protection of the statute providing for a two-year limitation in the case of malpractice, apparently proceeding on the theory that the two-year statute is in the nature of an indulgence to duly licensed physicians. The term "malpractice" is not defined in the statute. So far as the term has been used in relation to the medical profession, it has been applied not only to duly licensed physicians and surgeons but to irregular practitioners as well, and also to nurses, midwives and apothecaries. This has been its use in many well known medicolegal treatises. It signifies bad practices, either through lack of skill or through neglect to apply it, if possessed. The term "malpractice" has also been applied by the courts, not only to regularly licensed physicians and surgeons but to others who have held themselves out, professionally, as being able to treat the human body and cure its diseases. In *Brown* v. *Shyne*, 242 N. Y. 176, 151 N. E. 197, a case of alleged negligence of a chiropractor, the cause of action is referred to as one for negligence or malpractice, and it is said:

> The defendant in offering to treat the plaintiff held himself out as qualified to give treatment. He must meet the professional standards of skill and care prevailing among those who do offer treatment lawfully. If injury follows through failure to meet those standards, the plaintiff may recover.

This declaration fixes the standard of skill and care of a chiropractor in New York State, and establishes that as the standard of a legally authorized physician, and holds that liability follows a failure to perform acts in practice which falls short of that standard.

Malpractice involves any professional misconduct or any unreasonable lack of skill in the performance of professional duties. If the defendants, as chiropractors, are held in the treatment of their patrons and patients to the standard of care and skill required of regular physicians, then it must follow that a cause of action against them must be determined to be similar in kind to that which may be asserted under similar circumstances against a legal practitioner. Since the term malpractice has been used as indicated by the courts and by medicolegal writers, who, in many instances, are physicians and surgeons, it is the best evidence of the true significance of the word, in the absence of legislative definition. This court does not think that the two-year statute of limitations as to malpractice was adopted for the purpose of granting an indulgence to duly licensed physicians and surgeons, simply because they were regular and legal practitioners, but that it was passed because of the uncertainty of the results attending the treatment of disease in the first place, and the increasing difficulty of tracing such results as time goes on. Age, inherited traits, latent diseases or debilitated conditions sometimes render the most skilful treatment unavailing.

The failure to possess a certificate is not, at common law, evidence of incompetence, and, even under the statute recently enacted, the lack of a certificate is simply presumptive evidence of a lack of skill. It is not per se (in itself) malpractice to undertake to treat disease without a certificate.

In view of the present state of the law as it relates to malpractice, this court is of the opinion that the two-year statute of limitations applies to irregular as well as to regular practitioners, in the absence of express legislative declaration to the contrary. Order may be entered, dismissing the complaint.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, St. Louis, Oct. 15-19. Dr. William P. Wherry, Medical Arts Bldg., Omaha, Sec.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Toronto, September 10-12. Dr. James E. Davis, 1825 Geddes Avenue, Ann Arbor, Mich., Secretary.

American Child Health Association, Chicago, Oct. 15-19. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Physical Therapy, Chicago, October 8-13. Dr. R. W. Fouts, Medical Arts Building, Omaha, Secretary.

American College of Surgeons, Boston, October 8-12. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Electrotherapeutic Association, Boston, Sept. 10-14. Dr. Richard Kovacs, 223 East 68th Street, New York, Secretary.

American Public Health Association, Chicago, Oct. 15-19. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Secretary.

American Roentgen Ray Society, Kansas City, Mo., September 24-29. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.

American Social Hygiene Association, Chicago, Oct. 15-19. Dr. W. F. Snow, 370 Seventh Avenue, New York, General Director.

Association of Military Surgeons of the United States, Baltimore, October 4-6. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Sec'y.

Colorado State Medical Society, Colorado Springs, Sept. 11-13. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Delaware, Medical Society of, Rehoboth, Sept. 11-12. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Idaho State Medical Association, Yellowstone Park, August 27-29. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, Gary, September 26-28. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Kentucky State Medical Association, Richmond, Sept. 10-13. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Medical Library Association, New York, September 5-7. Miss Sue Biethan, Medical Librarian, University of Michigan, Ann Arbor, Sec'y.

Michigan State Medical Society, Detroit, September 26-28. Dr. F. C. Warnshuis, G. R. National Bank Building, Grand Rapids, Secretary.

Montana, Medical Association of, Yellowstone Park, August 27-29. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

Nevada State Medical Association, Reno, September 21-22. Dr. H. J. Brown, Box 688, Reno, Secretary.

New York and New England Association of Railway Surgeons, New York, October 12-13. Dr. Brooks W. McCuen, 423 James Street, Syracuse, New York, Secretary.

Oregon State Medical Society, Portland, September 20-22. Dr. F. D. Stricker, 410 Taylor Street, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Allentown, October 1-4. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Burlington, October 11-12. Dr. William G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Danville, Oct. 16-18. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Washington State Medical Association, Seattle, August 27-30. Dr. Curtis H. Thomson, 508 Cobb Building, Seattle, Secretary.

Western Branch of the American Urological Association, San Francisco-Del Monte, September 13-15. Dr. W. E. Stevens, Flood Building, San Francisco, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 11-14. Mr. J. G. Crownhart, 153 East Wells Street, Milwaukee, Executive Secretary.

Wyoming State Medical Society, Yellowstone Park, August 27-29. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Physical Anthropology, Philadelphia

11: 423-537 (April-June) 1928

Center of Gravity of Human Body During Growth: I. Improved Apparatus for Determining Center of Gravity. C. E. Palmer, Minneapolis.—p. 423.
Reduction of Variability in Inbred Population. I. G. Carter.—p. 457.
Growth of Kwangtung Chinese in Hawaii. V. B. Appleton, Honolulu, Hawaii.—p. 473.
Error in Interpretation and Formulation of Palmar Dermatoglyphics. H. Cummins, New Orleans, and Others.—p. 501.

American J. Surgery, New York

5: 1-98 (July) 1928

Surgery of Knee Joint: Fifty-Five Cases. A. Krida, New York.—p. 1.
*Cholecystectomy Without Drainage. R. S. Fowler, New York.—p. 8.
Traumatisms and Infections. S. R. Burnap, Los Angeles.—p. 15.
Malignancies. C. S. James, Los Angeles.—p. 17.
Management of Cases with Present or Potential Urologic Problems. A. A. Kutzmann, Los Angeles.—p. 19.
Surgery from Internist's Viewpoint. D. Fulton, Los Angeles.—p. 21.
Acute Surgical Abdomen. J. F. Connors, New York.—p. 24.
Epithelioma of Penis and Teratoid Tumors of Testis. A. L. Dean, Jr., New York.—p. 32.
Calculous Obstruction in Two Cases of Double Ureter. R. L. Dourmashkin, New York.—p. 39.
Cancer of Cervix: Hysterectomy Versus Radiation. E. Forgue, Montpellier, France.—p. 44.
Anorectal Tumors. S. G. Gant, New York.—p. 48.
Adjustable Hand and Foot Extension Appliances. H. C. Masland, Philadelphia.—p. 55.
Dermoid Cysts of Great Omentum. N. Mumey, Denver.—p. 56.
*Treatment of Burns. F. Christopher, Winnetka, Ill.—p. 61.
Primary Brachial Palsy Following Dislocation of Shoulder. H. Milch, New York.—p. 66.
Giant Cell Tumor of Tibia. M. Cleveland, New York.—p. 73.
Dyschondroplasia. M. Cleveland, New York.—p. 75.
Tuberculosis of Kidney. M. Goldman, Kansas City, Mo.—p. 76.
Diverticulosis of Large Intestine. R. H. Patterson, New York.—p. 81.
Pneumoperitoneum. R. H. Patterson, New York.—p. 82.
Solitary Cyst of Kidney. P. W. Aschner, New York.—p. 83.
Back Injuries in Industrial Practice. M. Campagna, New Orleans.—p. 84.
John Morgan, M.D., Founder of American Medicine. T. Welton, New York.—p. 91.

Cholecystectomy Without Drainage.—Fowler insists that drainage should be used in cases in which there is any outlying infection; in cases in which the gallbladder is acutely inflamed; in cases in which the common bile duct is drained; in cases complicated by pancreatitis, subacute or acute, and in cases in which hemostasis is not perfect; in other words, in all cases in which a technically perfect operation cannot be performed. Before the abdomen is closed without drainage in cholecystectomy, a light fluffy sponge moist with saline solution should be placed along the sutured gallbladder bed in the liver and lightly packed down into the foramen of Winslow. This gauze should come in contact with every bit of the operative field so as to make a print of any oozing areas. After a few seconds it is removed, and one notes whether or not there is any blood or bile stain on it. If such a stain is found a fresh sponge is fluffed out, the source of the stain is ascertained and if it cannot be remedied drainage is used. Drainage may be omitted if the cystic duct has been properly crushed, ligated and peritonealized; if the raw surface of the liver has been properly sutured to prevent the escape of bile; if hemostasis has been accurate and if there was not found at operation any outlying infection in the way of fresh adhesions, and if the gallbladder itself is not acutely inflamed. In other words, a technically perfect operation in the absence of infection does not require drainage. On the contrary, to institute drainage in such cases is to invite adhesions which may later cause disabling symptoms.

Treatment of Burns.—In extensive burns (that is, of 10 per cent or more of the body surface) Christopher first institutes treatment for shock by morphine, external heat, vigorous administration of fluids, and possibly blood transfusion. As early as possible, gauze saturated with 2.5 per cent tannic acid solution is applied to the entire burned area and kept moist with this solution for twenty-four hours or more until the burned skin is thoroughly tanned. The burned area is than treated by the open air method under a heated cradle, supplemented by warm boric or soda irrigations. Fluids are pushed, and epinephrine and sodium chloride may be exhibited. Repeated blood transfusions occasionally are indicated. When all sloughs have disappeared and the wound is clearly granulating, adhesive or rubber tissue strips are applied and scarlet red preparations may be used to accelerate epithelization. Skin grafting occasionally is advisable. For small burns (5 per cent of the body surface or less) the application of soothing ointments containing phenol (carbolic acid) or trinitrophenol and of gauze dressings is the best treatment.

Arkansas M. Society Journal, Little Rock

25: 21-50 (July) 1928

Proficiency of Preventive Medicine Depends on Applied Christianity. H. Thibault, Scott.—p. 21.

Atlantic Medical Journal, Harrisburg, Pa.

31: 707-790 (July) 1928

*Nature of Obesity. L. H. Newburgh, Ann Arbor, Mich.—p. 707.
Slit Lamp Microscopy: Diagnosis in Ocular Injuries. H. E. Thorpe, Pittsburgh.—p. 710.
Plastic Surgery of Face and Mouth. G. B. Jobson, Franklin, Pa.—p. 716.
Tangent-Screen Scotometer with Illuminating Device. W. W. Blair, Pittsburgh.—p. 723.
Heliotherapy in Treatment of Tuberculosis. A. Armstrong, White Haven, Pa.—p. 724.
*Mixed Infection in Pulmonary Tuberculosis. M. Solis-Cohen, Philadelphia.—p. 727.
Diagnosis and Treatment of Meningitis in Children. L. E. La Fetra, New York.—p. 732.
Prophylaxis of Exophthalmic Goiter. T. T. Sheppard, Pittsburgh.—p. 742.
Osteogenesis Imperfecta. F. P. McCarthy, Erie, Pa.—p. 745.
Purpura Hemorrhagica in Two Months Old Infant. J. F. Sinclair, Philadelphia.—p. 746.
Lymphocytic Leukemia Occurring in Twins. A. E. Siegel, Philadelphia.—p. 748.
Intestinal Obstruction Due to Duodenal Band. G. J. Feldstein, Pittsburgh.—p. 749.
Herpes Zoster Ophthalmicus in Infant of Fifteen Months. R. A. Knox, Washington, Pa.—p. 750.
Erythema Infectiosum. J. B. Feeley, McKeesport, Pa.—p. 752.

Nature of Obesity.—Newburgh states that disease does influence weight, but it does not influence it in the manner in which we have been taught to believe. If, for instance, a person with myxedema is fat, it is because he needs less calories than he did before, since the myxedema reduces the metabolic rate from 30 to 40 per cent. Unless he reduces his intake correspondingly, he must store the difference. The myxedema affects only the requirements for calories. Hypopituitarism or hyperpituitarism may bring about another effect. Obesity following encephalitis has been quite prominent in the last few years. This is caused by a disturbance of the appetite. The only relation of the brain disease to the weight is that the patient is abnormally hungry and eats too much. He has literally a disease of the appetite. Any disease which results in obesity must do so because it changes the previous relation between intake and outgo by increasing the appetite, by decreasing the demand, or by making a formerly active individual lazy.

Mixed Infection in Pulmonary Tuberculosis.—Solis-Cohen says that what is spoken of as mixed infection in pulmonary tuberculosis is, in many instances, an additional infection of a tuberculous lung with pyogenic organisms coming from a primary bacterial focus in the upper respiratory tract. Treatment of the tuberculous condition consists in raising the general resistance by means of hygienic measures and sometimes also in raising specific resistance by means of tuberculin, with dosage based on the patient's hypersensitiveness to both the exotoxin and the endotoxin of the tubercle bacillus. The pyogenic infection is treated by removal of infected tonsils and by opening, draining and aerating infected sinuses, preceded and followed by raising the specific resistance through the

administration of a vaccine, consisting chiefly of those organisms present that are pathogenic to the patient, as determined by pathogen-selective culture.

California and Western Medicine, San Francisco

29: 1-72 (July) 1928

Cost of Medical Care. R. L. Wilbur, Stanford University.—p. 1.
*Pathologic Physiology of Intracranial Neoplasms: Principle of Transmitted Pressure in Production of Symptoms. C. B. Courville, Loma Linda.—p. 2.
A Tribute. T. W. Huntington, San Francisco.—p. 8.
Origin of Word "Anesthesia." M. F. Kavanagh, San Francisco.—p. 10.
Microscopic Equipment. W. M. James, Panama, R. P.—p. 12.
Peptic Ulcer: One Hundred Cases. J. A. Guilfoil, San Francisco.—p. 15.
Asthma and Hay-Fever: I. S. H. Hurwitz, San Francisco.—p. 22.
*Heliotherapy in Pulmonary Tuberculosis. C. R. Howson, Los Angeles —p. 25.
Abnormal Kinks and Bands in Abdomen: Six Cases. A. Weeks and G. D. Delprat, San Francisco.—p. 30.
Lure of Medical History: Guy de Chauliac, Chirurgien et Maitre en Médecine. W. Dock, San Francisco.—p. 33.
Technic in Latent or Suspected Urethritis. W. G. Schulte, Salt Lake City.—p. 37.
Blood Sugar and Blood Pressure Under Emetine Treatment for Arthritis. M. C. Mensor, San Francisco.—p. 38.

Pathologic Physiology of Brain Tumors.—Symptoms in brain tumor have been ascribed to compression, irritation or destruction of brain tissues, and to disturbances of the circulation of the blood lymph and cerebrospinal fluid. Courville says that little attention has been given to the mechanism by which the symptoms have been produced. The principle of transmission of pressure does not replace these considerations but rather suggests a modus operandi for them. The symptoms attributed to an increase in intracranial pressure are due from a mechanical standpoint to (1) the obstruction of the cerebrospinal fluid pathways exerting its influence on the cranial vault, the cerebrum and cerebellum, and (2) to medullary pressure affecting the vagus and vasomotor centers. Symptoms pointing to disturbance in function of a definite nerve or brain area are not necessarily due to an adjacent tumor (localizing symptoms) but may be the distant result of transmitted pressure, either through intervening brain substance or by the compression of a functionally important structure against a bony wall, a prominence or the margin of a dural reduplication (false localizing symptoms).

Heliotherapy in Pulmonary Tuberculosis.—Howson deems sun and air baths, properly used, of definite benefit to many tuberculous patients. They may be contraindicated because of (*a*) the type or stage of the disease or (*b*) the inability of the patient to react owing to constitutional or acquired disabilities. Their use requires a knowledge of the dangers, a proper gradation of the dosage, and close observation for unfavorable reactions. Neglect of these precautions may lead to serious and even fatal consequences. Artificial sources of light may be used on dull days when the sun is not available. Present knowledge, while very incomplete, justifies the following statements: (*a*) It is desirable that the rays from these lamps approximate in composition those of the sun, and (*b*) the claims for the great superiority and freedom from danger of the ultraviolet rays to the exclusion of the balance of the solar spectrum are not justified.

Canadian M. Association Journal, Montreal

19: 1-144 (July) 1928

Equilibrium of Chemical Composition in Living Cells. J. M. Javillier, Paris.—p. 1.
Assessment of Cardiac Murmurs. J. Orr, St. Andrews, Scotland.—p. 7.
Aortic Insufficiency Due to Rupture by Strain of Normal Aortic Valve. C. P. Howard, Montreal.—p. 12.
*Fish Tapeworm: Intestinal Infection in Man. D. Nicholson, Winnipeg, Man.—p. 25.
*Tuberculous Aneurysm of Right Femoral Artery. R. B. Malcolm, Montreal.—p. 33.
Death Roll of Appendicitis Due to Absence of Classic Symptoms. H. A. Bruce, Toronto.—p. 38.
*Vertigo of Unknown Origin, Occurring as Mild Epidemic. C. B. Ross, Sanitarium, Ont.—p. 42.
Mimicry of Acute Abdomen in Cases of Cyclic Vomiting in Children: Case. T. Gibson and J. Mann, Kingston, Ont.—p. 44.
Nephrosis in Children. G. L. Boyd, Toronto.—p. 46.
*Selection of Blood Sugar Methods for Clinical Use in Diabetes. I. M. Rabinowitch, Montreal.—p. 49.
Comparison of Buffer Capacity of Various Milk Mixtures Used in Infant Feeding. A. M. Courtney and A. Brown, Toronto.—p. 51.
*Serum Therapy of Septicemia. F. T. Cadham, Winnipeg, Man.—p. 54.
Infections of Ear, Nose and Throat from General Practitioner's Viewpoint. L. de V. Chipman, Saint John, N. B.—p. 59.
*Intestinal Grip (So-Called). F. H. Boone, Hamilton, Ont.—p. 63.
General Anesthesia in Otolaryngology from Standpoint of Surgeon. E. Boyd, Toronto.—p. 68.
Anesthesia in Nose and Throat Surgery, from Standpoint of Anesthetist. S. Johnston, Toronto.—p. 70.
Rabies in Kingston District. W. D. Hay, Kingston, Ont.—p. 73.
Spontaneous Rupture of Heart: Case. J. Miller, Kingston, Ont.—p. 74.
Diabetes, Arteriosclerosis and Gangrene. E. H. Mason, Montreal.—p. 76.
Chorionepithelioma. E. Percival, Montreal.—p. 78.
Peace Time Policy and Health Program of Red Cross in Canada: Revelation of War. J. W. Robertson, Ottawa, Ont.—p. 91.
Report of School of Public Health Nursing of University of Montreal and French Health Center for 1927. J. A. Baudouin, Montreal.—p. 93.
Gastro-Esophageal Carcinoma: Diagnosis. L. J. Notkin, Montreal.—p. 96.
Richard Mead: Father of Preventive Medicine. W. H. Hattie, Halifax, N. S.—p. 101.

Fish Tapeworm Infestation.—Seven out of thirty-five pike from Lake Winnipeg and Lake Manitoba, examined by Nicholson, were infected with fish tapeworm larvae, as shown by feeding the larvae to dogs. Two out of seven pickerel were similarly infected. Examination of gold eye, sucker, tullibee, herring and whitefish did not reveal any larvae in the flesh or viscera. Thorough cooking of fish is the most important immediate means of preventing human infection.

Tuberculous Aneurysm.—In the case cited by Malcolm, the tubercle bacillus was found in the media of the arterial wall, showing the infection to have been due to transmission of the disease through the vasa vasorum.

Epidemic of Vertigo.—Several cases of vertigo of unknown origin are reported by Ross. In none of these cases were there present any of the auditory disturbances usually found in Menière's disease. Definite disease of the middle ear occurred so infrequently as to be considered a negligible factor in the etiology of the disturbance. The occurrence of the phenomena in so many cases suggests an infectious and contagious character. The frequency of recurrences denotes that the lesion is of inflammatory nature, and that complete resolution sometimes takes place slowly.

Tests for Blood Sugar.—The selection of a method for blood sugar estimation, as for all laboratory methods, Rabinowitch says, should depend on a knowledge of the principles involved in the test and the use one intends to make of the data. In clinical work, a blood sugar test fulfils its function only when it detects alterations of carbohydrate metabolism. Other considerations are simplicity of technical details of the test, and the preparation and stability of the necessary reagents. The fewer the reagents required and the longer they keep under ordinary conditions, the more practical does the test become; the fewer the manipulations, the simpler is the test, and the less are the sources of error. Experimental data are presented which show that the trinitrophenol method fulfils these conditions, and for routine clinical work its use is not only justified but ideal.

Serotherapy of Septicemia.—Eighteen patients with septicemia were treated by Cadham with repeated inoculations of a homologous immune animal serum and with repeated transfusions of human serum. Sixteen of the eighteen recovered.

Intestinal Grip.—Boone does not believe that there is evidence as yet sufficient to warrant the acceptance of the existence of a gastro-intestinal form of influenza in which the primary seat of infection is intra-abdominal in origin. If true intra-abdominal infection with the organism of influenza does occur, it is safer to regard it as a complication or sequela of a respiratory infection.

Journal of Bone and Joint Surgery, Boston

10: 401-643 (July) 1928

Peripheral Nerve Complications of Certain Fractures. H. Platt, Manchester, England.—p. 403.
*Stabilizing Lower Spine. E. A. Rich, Tacoma, Wash.—p. 415.
Fracture of Spine Without Paralysis. F. N. G. Starr, Toronto.—p. 418.
Differential Diagnosis of Sarcoma of Long Bones. W. B. Coley, New York.—p. 420.
Ossifying Hematoma: Case. S. M. Cone, Baltimore.—p. 474.
*Congenital Pseudarthrosis of Tibia. M. S. Henderson, Rochester, Minn. —p. 483.
Osteo-Articular Diseases of Vasomotor Origin: Hydrarthrosis and Traumatic Arthritis. R. Leriche, Strasbourg, France.—p. 492.
*Congenital Dislocation of Hip: Case. J. Ridlon, Chicago.—p. 501.

*New Hydrotherapy Tub. W. P. Blount, Milwaukee, and M. Elson, Madison, Wis.—p. 506.
Fracture of Spine of Tibia: Five Cases. P. B. Roth, London.—p. 509.
Relaxed Motion in Fracture Treatment. M. K. Lindsay, New Haven, Conn.—p. 519.
End-Results of Treatment of Congenital Dislocation of Hip. R. Stephens, New York.—p. 535.
Suspension Apparatus for Patients in Heavy Plaster Dressings. R. M. Yergason, Hartford, Conn.—p. 547.
Pill Roller Hand Deformities Due to Imbalance of Intrinsic Muscles: Relief by Ulnar Resection. A. Steindler, Iowa City.—p. 550.
*Purulent Arthritis. R. S. Reich, Cleveland.—p. 554.
Tensor Fasciae Femoris as Cause of Deformity. A. M. Forbes, Montreal.—p. 579.
Gradual Reduction of Congenital Anteriorly Dislocated Knees. E. T. Wentworth, Rochester, N. Y.—p. 585.
Cartilage Injuries. W. W. Lasher, New York.—p. 587.
Congenital Dislocation of Hip: Effect of Anterior Distortion: Procedure for Its Correction. A. Krida, New York.—p. 594.
*Treatment of Infected Wounds Without Sutures, Drainage Tubes or Antiseptic Dressings. H. W. Orr, Lincoln, Neb.—p. 605.

Stabilizing Lower Spine.—Rich implants a "shotgun" bone graft about 7 inches in length into the spinous processes of the lower two or three lumbar vertebrae, and, further, into the external lateral crest of the sacrum to nearly the middle of the sacrum, and thence laterally extended in a grave across the lower portion of the sacro-iliac joint just above the posterior superior spina. The graft is greensticked in one place to conform to the spinal concavity and is cut through to the periosteum in one place to permit the outward angulation. Solid ankylosis without sequelae has resulted in the cases in which the method was used. Again, in sacro-iliac mobilities in which stability has been required, Rich has injected directly into the joint cartilages, between the sacrum and ilium, from 5 to 15 drops of supersaturated tincture of iodine. By this chemical irritation, he has secured moderate inflammations which have resulted in firm ankylosis.

Congenital Pseudarthrosis of Tibia.—In the seven cases reported by Henderson, all of the patients had the typical angulation and deformity of forward bowing in the lower third of the tibia at birth. In four cases, the fracture was definitely noted either at birth or within the next few days. In three, although deformity was noted at birth, the fracture and subsequent pseudarthrosis followed correction of the malposition. In four cases, however, there was no question about the mobility having been noted by the parents. Six of the seven patients were males. Operations were performed on five of the seven patients with only two successful results.

Congenital Dislocation of Hip.—In Ridlon's case, the birth of the child was by cesarean operation, and the false socket, in which the dislocated head has rested for more than six years, has developed an extraordinary shelf above the head.

New Hydrotherapy Tub.—Plans are shown by Blount and Elson for a tub to be used in the hydrotherapeutic treatment of subacute and chronic cases of poliomyelitis.

Purulent Arthritis.—Reich emphasizes the fact that acute purulent joint infections occur very frequently and are primarily surgical problems. They may be either synovial or osteogenic infections and the latter are the predominating type in children, usually secondary to osteomyelitis. As in acute osteomyelitis, immediate surgical intervention should be resorted to and repeated as often as necessary, depending on the persistence of acute symptoms of infection. There is never any indication for frank incision of a joint in synovial infections and rarely in osteogenic infections, and in these the incision should be confined to that portion near the joint which has been demonstrated by roentgenograms to show bone change, the articular capsule being avoided. The end-results in aspiration and lavage of purulent joints are very good and are dependent entirely on the length of time that has transpired between the inception of the infection and the treatment. Twenty cases are reported.

Treatment of Infected Wounds.—First of all, Orr places the injured parts in correct position, employing the fracture table or skeletal traction if necessary. Then primary treatment is given as simply as possible according to the condition of the wound. The wound is packed wide open in every part with an aseptic, nonabsorbent mass, and finally over a dry sterile dressing a splint or case is applied which will maintain parts in correct position during the entire period of healing. In this manner primary infection is reduced or at least not added to. No stitches or tubes are employed. There are no irrigations or wet packs. The petrolatum mass is inserted to facilitate drainage and for secondary protection. Finally, no dressings are done. The primary dressing is allowed to remain for a number of weeks (from two to six) until wound healing is well established and until at least primary consolidation of the fracture has occurred. In a number of cases the result has been practically a primary closure and there is a process that resembles a secondary closure in all.

Journal of Nervous and Mental Disease, Albany, N. Y.

68: 1-112 (July) 1928

Synreflexia (Association of Reflexes). A. Austregesilo, Rio De Janeiro.—p. 1.
Adhesive Spinal Arachnoiditis Simulating Spinal Cord Tumor: Case. W. W. Young, Atlanta, Ga.—p. 11.
*Eugenic Sterilization in California: 6. Marriage Rates of Psychotic. P. Popenoe, Pasadena, Calif.—p. 17.
Sadism and Masochism: Esoteric Flagellation. J. L. McCartney, Washington, D. C.—p. 28.
Psychoses in Criminals: Clinical Studies in Psychopathology of Crime. B. Karpman, Washington, D. C.—p. 39.

Marriage Rates of Psychotics.—Popenoe concludes his study as follows: The marriage rate of psychotic persons of both sexes is markedly below that of the general population at all ages. While the males marry freely (though in diminished proportion) at all ages, the female marriage rate remains almost constant after the age of 30. Since three fourths of all patients first admitted are aged 30 or over, it appears that a woman who is single on admission to a hospital for mental diseases is, even if promptly discharged, likely to remain single during the rest of her life. A far-reaching program of sterilization must therefore find some way of dealing with these women in the prepsychotic stage. There is some indication that in women the lower marriage rate is partly due to deliberate abstention from marriage, and not merely to failure to attract a mate. Wide differences exist in the marriage rates of men with various types of psychosis. The same variation is found in women, but is one-third less than in men. The marriage rate of sterilized patients with dementia praecox is lower than that of those with manic depression at all ages. The two curves do not show any other striking disparity. In a small group of males with dementia praecox, the percentage having more or less normal heterosexual libido is much larger than has been reported in previous studies.

Journal of Urology, Baltimore

20: 1-146 (July) 1928

Surgical Pathology of Malformations in Kidneys and Ureters. J. E. Davis, Detroit.—p. 1.
Peristaltic and Antiperistaltic Movements in Excised Ureters as Affected by Drugs. C. M. Gruber, St. Louis.—p. 27.
Calculus of Upper Urinary Tract Treated by Drainage: End-Results. G. L. Hunner, Baltimore.—p. 61.
Gonococcal Infection of Kidney: Gonococcal Hydropyonephrosis. K. E. Birkhaug and A. L. Parlow, Rochester, N. Y.—p. 83.
Cavernous Hemangioma of Kidney: Case. J. A. Jenkins and A. M. Drennan, Dunedin, New Zealand.—p. 97.
Nephro-Ureteral Anastomosis. H. Bailey, Birmingham, England.—p. 103.
Uretero-Ureterostomy as Applied to Obstructions of Duplicated Upper Urinary Tract. F. E. B. Foley, St. Paul.—p. 109.
Ureteral Dilating Bougies and Cystoscope. R. L. Schulz, Los Angeles.—p. 121.
Alkaline Incrusted Cystitis, Urethritis and Prostatitis. W. M. Kearns, Milwaukee.—p. 125.
Priapism Caused by Tumor of Corpora Cavernosa. W. A. Frontz and E. P. Alyea, Baltimore.—p. 135.
New Lithotriptoscope. A. Ravich, New York.—p. 143.

Kentucky Medical Journal, Bowling Green

26: 331-382 (July) 1928

Headache: Diagnostic Problem. M. Flexner, Louisville.—p. 333.
Progress of Medicine. O. R. Kidd, Paducah.—p. 340.
Chronic Mastoiditis with Facial Paralysis: Recovery Following Operation. O. Dulaney, Louisville.—p. 342.
Digitalis. L. L. Solomon, Louisvills.—p. 347.
Case of Tetanus with Recovery. E. L. Henderson, Louisville.—p. 357.
Resection of Stomach for Carcinoma: Case. G. P. Grigsby, Louisville.—p. 360.
When Should Senile Cataracts be Extracted? W. Dean, Louisville.—p. 366.
Chronic Appendicitis with Adhesions and Stasis. M. Casper, Louisville.—p. 373.
Some Moral Problems Pertaining to Obstetric Practice in Catholic Hospitals. W. Gossett, Louisville.—p. 376.

New England Journal of Medicine, Boston

199: 167-212 (July 26) 1928

Biologic Tests for Medicolegal Purposes. L. Hektoen, Chicago.—p. 120.
Massachusetts Medicolegal Society. T. Leary, Boston.—p. 127.
Functions of Massachusetts Medicolegal Society. G. B. Magrath, Boston.—p. 131.
Reminiscences of Society. O. H. Howe, Cohasset, Mass.—p. 132.
*Treatment of Arthritis: Use of Ammonium Orthoiodoxybenzoate. M. Smith, Ann Arbor, Mich.—p. 133.
*Rheumatic Heart Disease. W. D. Reid, Boston.—p. 139.
Endemic Goiter in Massachusetts. C. R. Doering, H. L. Lombard, Boston, and F. Moore, Hyannis, Mass.—p. 143.
End-Results of 100 Unselected Radical Mastoid Operations. L. E. White, Jr., Boston.—p. 145.

Treatment of Arthritis.—A considerable number of patients having arthritis have been encountered who either obtain no benefit from repeated doses of ammonium orthoiodoxybenzoate or are made worse. A study of these patients has brought out the observation that they are constipated or complain of various forms of indigestion, and that either they have no evidence of foci of infection or the removal of the foci of infection in the teeth, tonsils, nose or sinuses is not followed by symptomatic relief to acute arthritic signs and symptoms. It is suggested by Smith that these patients are absorbing toxin from the gastro-intestinal tract (bowel). The possible danger of repeated injections to these patients is presented. It has been Smith's practice to continue administration of the drug until the patient receives no further benefit, and this usually has occurred in patients with chronic arthritis after the administration of from fifteen to twenty doses. The method of courses has been tried, but, as a rule, it has been found that by the time the patient returns for a second course the physical therapeutic measures, which have been used in the interim, have been so beneficial that further use of the drug is not necessary or produces only a slight change in symptoms. There does not seem to be any harm in repeated injections of the drug. One patient under observation has received thirty-two intravenous injections without apparent harm.

Rheumatic Heart Disease.—Statistics are cited by Reid which show that the heart is involved in the initial attack of rheumatic fever in 78 per cent of patients between 5 and 10 years of age, and in not less than 50 per cent of those under 25. Recurrences of the infection may reach as high a figure as 93.4 per cent in children between 5 and 10 years, and in those experiencing a repetition of the acute attack of rheumatic fever the second attack did not appear until after four or more years in 43 per cent of the patients of all ages. Recurrences are much less frequent in patients older than 25 at the time of the first attack of rheumatic fever. The average case progresses to a fatal termination in fifteen years. Even though the patient may be desperately ill, it is the rule that he will become convalescent from the first attack. Auricular fibrillation is a common sequela after a lapse of some years. There is no specific therapy. Salicylate drugs are very efficient in relieving the exudative phenomena, such as the joint pains, but not those of the proliferative type. The continued prescribing of salicylates after convalescence is established is open to question. Rest in bed is indicated during the acute stage of the disease and for a sufficient after-period to permit healing of the recently acquired lesions in the heart. The amount of injury which the heart has incurred, and the financial, social and intellectual status of the patient are all important in deciding on the advice to be given; the latter must be individualized for each patient.

New York State J. Medicine, New York

28: 837-900 (July 15) 1928

Endocrinopathies. T. P. Sprunt, Baltimore.—p. 837.
Some Abdominal Diseases from General Practitioner's Viewpoint. J. B. Deaver, Philadelphia.—p. 843.
Bronchopulmonary Suppuration: From Medical Standpoint. J. J. Lloyd, Rochester.—p. 846.
Id.: From Roentgenologic Standpoint. E. F. Merrill, Rochester.—p. 852.
Id.: From Bronchoscopic Point of View. C. A. Heatly, Rochester.—p. 854.
Id.: From Surgical Standpoint. E. W. Phillips, Rochester.—p. 856.
Changes in Hair Following Vasoligation. H. Benjamin, New York.—p. 862.
*Unusual Reaction After Instrumentation of Urethra. M. Meltzer, New York.—p. 865.

Reaction Following Instrumentation of Urethra.—In Meltzer's case the passage of a number 28 French sound was followed by the sudden and unexpected appearance of wheals over various parts of the body; marked swelling and purplish discoloration of both hands extending to both forearms; marked redness of both conjunctivae; rapid pulse; dyspnea, and a sensation of air hunger and impending death. The blood pressure was 130 systolic and 70 diastolic. The patient was placed on a cot, and assured that he would soon be well again. Aromatic spirits of ammonia by mouth and an intramuscular injection of 10 minims (0.6 cc.) of 1:1,000 epinephrine solution was given. In about ten minutes the dyspnea, air hunger and sensation of impending death disappeared. Thirty minutes after the onset of this unusual reaction, the patient was able to leave the office. Some of the wheals had vanished, while a few remained scattered over the chest, abdomen and upper extremities; the conjunctivae were still red, and the swelling of both hands still persisted. For the next twenty-four hours there was general malaise and the temperature rose to 100.5 F. The wheals and the swelling of the hands gradually disappeared. Seventy-two hours later he was apparently none the worse for his experience.

Northwest Medicine, Seattle

27: 319-362 (July) 1928

Pellagra: Thirty-Four Cases in Localities Where Pellagra Is Not Endemic. P. A. O'Leary, Rochester, Minn.—p. 319.
Laryngeal Paralysis and Thyroid Surgery. J. B. McNerthney, Tacoma, Wash.—p. 323.
*Treatment of Parathyroid Tetany with Cod Liver Oil and Yeast. J. C. Brougher, Portland, Ore.—p. 329.
Mastoiditis and Other Foci of Infection: Cause of Gastro-Intestinal Disturbance in Children. M. L. Bridgeman, Portland, Ore.—p. 332.
Value of Cholecystography. P. E. Spangler and F. C. Trahar, Portland, Ore.—p. 336.
*Angina Pectoris. R. K. Keene, Spokane, Wash.—p. 339.
*Acute Suppurative Appendicitis in Infant of Three Months. R. H. Somers, Seattle, Wash.—p. 344.
Streptococcus Meningitis in Five-Day Old Infant. L. H. Smith, Portland, Ore.—p. 345.
Agranulocytic Angina Without Ulceration. A. B. Murphy, Everett, Wash.—p. 346.
*Simple Treatment of Extensive Burns. J. F. Scott, Yakima, Wash.—p. 347.
Bacteria from Goiter Tissues: Their Cultivation. E. O. Houda, Tacoma, Wash.—p. 348.

Cod Liver Oil and Yeast in Treatment of Parathyroid Tetany.—Brougher states that the postoperative administration of cod liver oil and yeast to thyroparathyroidectomized dogs delayed the onset of tetany and ameliorated its severity. Anorexia could not be prevented by supplying a large amount of vitamin B in the daily diet. Tetania parathyreopriva is apparently due to deranged calcium metabolism which may be controlled by the administration of cod liver oil and yeast. Dogs after receiving this diet thirty to forty days recovered and needed no further treatment. Cod liver oil and yeast therapy caused the blood calcium to return to normal and relieved the symptoms of parathyroid deficiency in two patients. Two others who developed tetany during pregnancy were relieved of all symptoms of tetany by the use of cod liver oil alone.

Angina Pectoris.—Keene cites instances showing that not every case of narrowing and sclerosis of the coronary artery causes the symptom-complex of angina pectoris. Autopsy has shown normal coronary arteries, not narrowed, in persons who during life gave a history of angina pectoris. Coronary artery sclerosis, narrowed or occluded, has caused atypical symptoms of angina pectoris. The real disease of the heart, which is on the increase in taking the lives of men actively engaged in strenuous business, is myocardial degeneration. In this degeneration of the myocardium a fibrosis is found which is generally caused by coronary sclerosis or there may be an infarct as a result of the occlusion of a coronary artery. The occlusion is caused by a thrombus or an embolus, generally a thrombus. There may be a slow occlusion through a gradual closure of a sclerosed coronary branch. The characteristic symptoms of coronary artery occlusion are sudden unrelieved pain, great prostration, a fall in the blood pressure, some fever, leukocytosis and a precordial friction sound. The electrocardiogram gives the characteristic inverted T wave. There may be other changes in the electrocardiogram.

Acute Suppurative Appendicitis in Infant.—The symptoms presented in Somers' case led to a diagnosis of intussusception, but at operation a careful search did not reveal any trace of an intussusception. The appendix, however, was large,

dusky red and clubbed at the distal end, but was not perforated. Its removal was easily accomplished; the abdomen was closed, and the infant was returned to its room in good condition. The laboratory diagnosis was acute purulent appendicitis. The postoperative course was very stormy. On the third day vomiting started and persisted in spite of all treatment. There were no abnormalities in the chest, but the abdomen became progressively distended. The child died on the fifth postoperative day. Death was due to an acute purulent peritonitis, following appendectomy.

Treatment of Burns.—Scott first covers the burn with gauze wet with 20 per cent sodium bicarbonate solution. Many years ago an English surgeon advocated a 10 per cent zinc stearate-petrolatum ointment for use in burns. This is somewhat antiseptic, very light, and readily rubbed into the meshes of gauze, so that it does not adhere to the surface. The dressing is applied over the entire cleansed area, well covered with cotton and not changed for eight days. The patient's general condition improves; he eats and sleeps, and his temperature falls. Scott reports very good results from this treatment.

Surgery, Gynecology and Obstetrics, Chicago

47: 1-144 (July) 1928

*Symptoms Produced by Distention of Gallbladder and Biliary Ducts. V. L. Schrager and A. C. Ivy, Chicago.—p. 1.
*Cardiovascular Complications: Relation to Surgery. L. G. Rowntree, Rochester, Minn.—p. 14.
*Juvenile Exophthalmic Goiter. A. B. McGraw, Detroit.—p. 25.
Significance of Mucus-Forming Cells in Carcinoma of Large Intestine and Rectum. N. C. Ochsenhirt, Rochester, Minn.—p. 32.
*Vaginal Hernia. J. C. Masson and H. E. Simon, Rochester, Minn.—p. 36.
*Pyuria in Chronic Uncomplicated Prostatitis. A. Horwitz and W. H. von Lackum, Rochester, Minn.—p. 42.
Infective Osteomyelitis. R. Kennon, Liverpool, England.—p. 44.
Surgical Importance of Roentgen-Ray Examination of Trachea and Bronchi. A. Eiselsberg and M. Sgalitzer, Vienna.—p. 53.
Larsen-Johansson's Disease of Patella. G. W. Hawley and A. S. Griswold, Bridgeport, Conn.—p. 68.
Radical Operation for Relief of Trigeminal Neuralgia. C. H. Frazier and W. J. Gardner, Philadelphia.—p. 73.
Aseptic Method of Intestinal Anastomosis: Rankin Clamp. F. W. Rankin, Rochester, Minn.—p. 78.
Arthroplasty of Knee. W. C. Campbell, Memphis, Tenn.—p. 89.
*Arterial Occlusion by Means of Autogenous Fascial Strips. R. W. McNealy and M. E. Lichtenstein, Chicago.—p. 99.
Treatment of Fractures of Neck of Femur by Double Leg Casts in Fixed Traction and Triangle Truss Support. J. E. M. Thomson, Lincoln, Neb.—p. 101.
*New Procedure in Diagnosis of Ureteral Calculi. R. L. Dourmashkin, New York.—p. 105.
Bilateral Double Pelvis and Ureter with Anomalous Opening of Superior Left Ureter into Urethra: Congenital Ureteral Incontinence. R. Alessandri, Rome.—p. 111.
Uterine Sterilization. W. O. Sherman, Pittsburgh.—p. 115.
*Are Picric Acid and Mercurochrome Solutions Locally Anesthetic? D. I. Macht, Baltimore.—p. 123.

Distention of Gallbladder and Bile Ducts.—It has been observed clinically that patients with distended gallbladder or with stone impacted in the cystic duct suffer from respiratory embarrassment during an attack of colic. This symptom has been of much value in the differential diagnosis of diseases of the gallbladder and biliary ducts, because it is either absent or not significantly present in any other abdominal complex. Physiologic experiments have demonstrated that distention of the gallbladder and biliary ducts causes inhibition of respiration, chiefly inspiratory in type. Distention also produces other symptoms such as nausea, vomiting and distress, in proportion to the degree of distention of the biliary passages. Distention of the biliary ducts causes more striking symptoms than distention of the gallbladder alone. It has been observed that nausea, vomiting and some of the respiratory inhibition are abolished by section of the vagi, and that distress and some respiratory inhibition are likewise abolished by section of the right splanchnic. Instillation of cocaine or procaine into the bile ducts temporarily abolishes or ameliorates the symptoms caused by distention; this is also true in subcutaneous injections of cocaine. Blocking of the right splanchnic nerve with procaine or alcohol under direct vision produces results equivalent to right splanchnic section. Distention of the ducts causes changes in the blood pressure and heart rate, but these changes are not uniform. Schrager and Ivy believe that the reaction of the cardiovascular system to distention of the biliary passages is dependent on the functional condition of the cardiovascular system at the time the distention occurs. It was found by the authors that intermittent distention of the biliary ducts over a period of one week caused decided dilatation. It was further observed that during the respiratory inhibition caused by distention, the right side of the diaphragm was contracted, apparently to serve as a splint.

Cardiovascular Complications.—In the main, this paper by Rowntree is a plea for better and greater cooperation between internists and surgeons in order that better preoperative and postoperative care of the patients may be effected and cardiovascular complications and resulting deaths prevented.

Juvenile Exophthalmic Goiter.—McGraw reports two cases occurring in children, aged 6 and 7 years, respectively. In one case, a subtotal thyroidectomy was performed with excellent results. The operation was refused in the second case.

Vaginal Hernia.—Five cases are reported by Masson and Simon—the only ones observed at the Mayo Clinic. The symptoms are not characteristic and it is only rarely that a diagnosis is made previous to operation. Frequently, the true nature of the condition is overlooked even at operation, and it may be only after the failure of one or repeated operations that the correct diagnosis is made. Careful examinations will eliminate these errors. The etiology is not definitely known but it seems plausible that congenital weakness of the muscles which form the pelvic floor may be the predisposing factor in the production of many, if not all, of the cases. The treatment is surgical and, while it has not been standardized because of the variations in the complicating pelvic conditions, the principles of an adequate procedure are well defined and correspond to those governing the treatment of hernias elsewhere.

Pyuria in Chronic Prostatitis.—A history of gonorrhea was elicited in 269 of the 500 cases of prostatitis analyzed by Horwitz and von Lackum. In about one third of the cases the urine was clear, and in about 89 per cent it was either normal or almost normal. In 11 per cent there was either mild or marked pyuria; the more severe the prostatitis, the more severe the pyuria. In about 15 per cent of the cases in which gonorrhea was associated, there was either mild or marked pyuria. In the cases of mild pyuria the more severe the prostatitis, the less frequent the incidence of gonorrhea. In the cases of marked pyuria, gonorrhea was present in approximately 80 per cent regardless of the severity of the prostatitis.

Arterial Occlusion by Fascial Strips.—McNealy and Lichtenstein describe a method of gradual occlusion of a blood vessel by transplants of fascia placed about the vessel and anchored in such a way that continuous traction is made in a constricting manner. One end of this strip is threaded through a slit in the opposite end, thus forming a fixed loop about the vessel. Traction on the ends serves not only to constrict the vessel but also to angulate it slightly.

Diagnosis of Ureteral Calculi.—The method devised by Dourmashkin depends on the property of the rubber-bag catheter, when introduced into the ureter and inflated, to expand not only laterally but in a longitudinal direction as well, as has been shown by the author experimentally on cadavers and clinically in a large series of cases. The type of rubber bag used is that which is attached to the catheter only at the proximal end. The bag, when introduced to a point even several centimeters below the calculus, will continue to expand until the stone is reached. If the stone is impacted, the longitudinal expansion will stop short. If the stone is movable, it will, as a rule, be pushed up by the inflated bag, sometimes for a distance of 4 or 5 cm. This was demonstrated clinically in numerous instances. In all cases the resulting bagogram will show the stone above the inflated bag unless the bag was distended when placed deliberately alongside of the stone, in which case definite indentation will be produced on the side of the bag in contact with the calculus. A rubber bag introduced below the shadow in question, previously noted alongside an ordinary opaque catheter, will produce, when inflated with an opaque solution, a shadow which will be superimposed on, and cause the complete disappearance of, any shadow of extra-ureteral origin, while that of a true stone will be seen above the bagogram.

Trinitrophenol and Mercurochrome Not Anesthetics.—Solutions of trinitrophenol and mercurochrome-220 soluble were tested by Macht in regard to their local anesthetic properties by a well known pharmacologic method and were found to

be not locally anesthetic. The sedative effects of mercurochrome and trinitrophenol solutions in the treatment of burns and scalds must therefore be explained in other ways. By incorporating 1 or 2 per cent of benzyl alcohol with these drugs, such solutions can be rendered locally anesthetic and may therefore become more useful for clinical purposes.

Texas State J. Medicine, Fort Worth

24: 173-250 (July) 1928

Treatment of Poliomyelitis in Light of Future Rehabilitation. A. H. Brewster, Boston.—p. 186.
Public Health Aspects of Feeblemindedness. J. G. Wilson, El Paso.—p. 189.
Full-Time County Health Service. J. G. Townsend, Little Rock, Ark.—p. 192.
*Complement Fixation Test for Pellagra. T. C. Terrell, Fort Worth, and D. R. Venable, Tulsa, Okla.—p. 196.
Nonmalignant Uterine Hemorrhage and Its Treatment. O. L. Norsworthy, Houston.—p. 200.
Chronic Ulcerative Colitis. W. E. Nesbit, San Antonio.—p. 204.
Liver Diet in Treatment of Severe Anemia. R. J. Reitzel and C. T. Stone, Galveston.—p. 208.
Treatment of Pernicious Anemia with Liver Diet. O. B. Kiel, Wichita Falls.—p. 212.
Diagnosis in Urology. G. Carroll, St. Louis.—p. 219.
Diarrheas: Classification and Treatment. W. J. Masters, Wichita Falls.—p. 222.
*Pertussis: Treatment with Ultraviolet Ray. W. W. McCaw, Fort Sam Houston.—p. 224.
Rehabilitation of Injured by Physical Therapy. W. L. Cahall, Palestine.—p. 228.

Complement Fixation Test for Pellagra.—Terrell and Venable describe the method of preparation of the antigen they use for their complement fixation test of pellagra and briefly relate some of their results in 500 cases. They regard their test as a valuable laboratory aid in the diagnosis of pellagra, and as a specific serum reaction for pellagra which is nearly if not quite as valuable as the complement fixation reaction for syphilis.

Treatment of Whooping Cough with Ultraviolet Ray.—Two hundred and one children and twenty-five adults with definitely established whooping cough were treated by McCaw by ultraviolet rays. The disease was shortened in 25 per cent; vomiting and paroxysmal cough were promptly relieved in 52 per cent; vomiting and whoop were relieved in another 38 per cent, and no improvement was noted in 10 per cent. Increased appetite and gain in weight were found in 90 per cent.

Virginia Medical Monthly, Richmond

55: 225-294 (July) 1928

Causes and Treatment of Arterial Hypertension. T. P. Sprunt, Baltimore.—p. 225.
Cisterna Magna Puncture in Newborn: Three Cases. M. P. Rucker, Richmond.—p. 231.
Actinomycosis of Face. J. A. Cahill, Jr., Washington, D. C.—p. 233.
Surgical Management of Goiter. C. B. Morton, University.—p. 237.
Liver Abscess: Twenty Cases. J. M. Rogers, Soonchun, Korea.—p. 242.
Splenectomy in Hemorrhagic Purpura: Case. H. C. Jones, Petersburg.—p. 245.
Twins. J. L. Riggles, Washington, D. C.—p. 250.
Dentition: Is It Pathologic Process? S. Newman, Danville.—p. 251.
Undulant (Malta) Fever. A. Corpening, Richmond.—p. 254.
Treatment of Gallbladder Disease. B. F. Eckles, Richmond.—p. 256.
Field Training of County Health Personnel. C. N. Leach, New York.—p. 257.
Renal Infection. R. M. LeComte, Washington, D. C.—p. 260.
Prenatal Care. E. L. Lowenberg, Norfolk.—p. 263.
Cooperation of Attending Physician. W. Miles, Esq., Bristol.—p. 267.
Intestinal Stasis: Functional Types. M. I. Bierman, Washington, D. C.—p. 270.
Physical Examinations Necessary in Diagnosis. C. R. Anderson, Winchester.—p. 272.

Wisconsin Medical Journal, Milwaukee

27: 301-348 (July) 1928

Measuring Public Health Work by Definite Standards. W. W. Bauer, Racine.—p. 301.
Obstetrics: Present Status. E. B. Pfefferkorn, Oshkosh.—p. 305.
Suprapubic Prostatectomy: Postoperative Treatment. I. R. Sisk, Madison.—p. 308.
Poliomyelitis in Wisconsin in 1927. H. M. Guilford, Madison.—p. 310.
Diagnosing for Juvenile Delinquency. R. E. Bushong, Milwaukee.—p. 312.
Diagnostic Problems. L. M. Warfield, Milwaukee.—p. 313.
Acute Infantile Cerebral Paralysis (Hemiplegia): Case. W. C. Edwards and R. F. Breeden, Richland Center.—p. 314.
Subacute Pancreatitis. E. F. Mielke, Appleton.—p. 315.
Bovine Tuberculosis in Children. T. L. Harrington, Milwaukee.—p. 317.
Public Relations of County Medical Society. A. W. Rogers, Oconomowoc.—p. 340.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 1-40 (July 7) 1928

Problem of Cancer. G. L. Cheatle.—p. 1.
Dick Test. B. A. Peters and S. F. Allison.—p. 4.
Antirachitic Action of Irradiated Ergosterol in Children and Adolescents. S. J. Cowell.—p. 5.
*Results of Ingestion of Large Amount of Glucose. W. J. May.—p. 7.
*Ether Convulsions. A. C. R. Walton.—p. 8.
Systemic Treatment of Infective Arthritis. V. Coates.—p. 9.
Persistent Priapism Due to Secondary Carcinoma in Corpora Cavernosa. R. C. Begg.—p. 10.
Eight Stage Classification of Pulmonary Tuberculosis. B. A. Perott.—p. 11.
Colloidal Antimony in Treatment of Tuberculosis. P. Moxey.—p. 12.
Papillae Foliatae and Carcinophobia. C. J. Marshall.—p. 13.
Overlooked Alveolar Abscess. G. G. Macphee.—p. 13.
Duplication of Testis. J. S. Ramage.—p. 13.
Traumatic Rupture of Tuberculous Ileocecal Glands. J. Sims.—p. 13.
Musculospiral Nerve Paralysis: Case. C. M. Eynon.—p. 14.
Pigmentation Associated with Low Blood Pressure Without Suprarenal Changes. N. Burgess and H. M. Browne.—p. 14.

Results of Ingestion of Dextrose.—Nine patients showing a normal dextrose tolerance were examined by May after the administration of 1,000 Gm. of dextrose. Five of these showed a hyperglycemia with a corresponding glycosuria. Four of the patients did not show any hyperglycemia, but showed a glycosuria varying from a trace to 2 per cent. Therefore, these patients passed sugar in the urine at a leak point which is below what is considered to be the leak point of the normal person. Seven of the patients continued to pass sugar in the urine for varying periods up to eighteen hours after the blood sugar had returned to normal limits.

Ether Convulsions.—A case of epileptiform convulsions is described by Walton, occurring during the course of ether anesthesia. The ether was shown, by readily utilized tests, to contain large proportions of two well known impurities sometimes associated with ether. Although nine other bottles of the same batch were subjected to the same tests, no impurities were detected. Acetaldehyde was probably the factor causing the convulsions by its action on a nervous system perhaps already rendered susceptible by a pneumococcal septicemia, but certainly a nervous system to which epilepsy was previously quite foreign. Acetaldehyde, being of higher specific gravity and therefore less volatile than ether, accumulated in the system and was eliminated less speedily, thus causing the delayed postoperative seizures. No cases of ether convulsions were recorded when ether was used as an anesthetic during the seventy years previous to 1919. At this time various contentions were published that pure ether was not an anesthetic, and as a result impure ethers came into use.

Journal of Hygiene, London

27: 343-442 (June) 1928

Investigation of Bacilli of Capsulatus-Mucosus Group. J. Bamforth.—p. 343.
Life Cycle of Bacteria: Alternate Asexual and Autogamic Phases. F. H. Stewart.—p. 379.
Epidemic Potency of Strains of Bacteria Aertrycke of Varying Virulence. W. W. C. Topley, and Others.—p. 396.
Relation of Virulence in Pneumococci to Disease: Comparison of Virulence of Different Types of Pneumococci in Various Pathologic Conditions. C. H. Whittle.—p. 412.
Decline in Infant Mortality. P. L. McKinlay.—p. 424.

Lancet, London

2: 1-50 (July 7) 1928

History of Epidemiology During Last Hundred Years. W. H. Hamer.—p. 1.
*Intensive Serum Treatment of Severe Diphtheria. H. S. Banks and G. McCracken.—p. 4.
Inflammations and Fistulas of Salivary Glands: Treatment. C. P. G. Wakeley.—p. 7.
*Rheumatic Lung. A. E. Naish.—p. 10.
*New Method of Administering Heavy Metals: Treatment of Cancer. J. L. Jona.—p. 15.
Acute Intestinal Obstruction Caused by Fecal Impaction. J. Fanstone and G. Golden.—p. 15.
*Multple Superficial Ulcers of Small Intestine. K. Kanagarayer.—p. 16.

Intensive Serum Treatment of Diphtheria.—The treatment of severe diphtheria by large doses of antitoxin, administered chiefly by the intravenous route, has been a routine

measure for more than a year in the Leicester Isolation Hospital. Banks and McCracken assert that the results justify this procedure. Perhaps the most striking feature is the reduction in the death rate from diphtheria. The average death rate calculated on all completed cases—i. e., those discharged or terminating fatally—during the eleven years from 1916 to 1926 was 9.3 per cent, the lowest mortality in any year being 7.3 per cent, and the highest 13.2 per cent. The new method was adopted, April 1, 1927, and during the succeeding period of twelve months—i. e., to March 31, 1928—the death rate was 2.6 per cent. Exclusive of patients with laryngeal diphtheria and those dying within twelve hours of admission, the death rate was 1.7 per cent. The 300 verified cases dealt with during the period included no less than twenty-seven malignant or severely toxic cases of diphtheria, in most of which, according to former experience, death would have resulted from the older method of treatment whereas, under the new condition, there were only six deaths. The very toxic cases amounted to 9 per cent of the total, and this figure approximately corresponds with the average death rate for past years. On the other hand, the number of laryngeal cases was exceptionally low during the period, and this fact would tend to keep the death rate low. In malignant or severely toxic cases antitoxin was administered both intravenously and intramuscularly in doses varying from 70,000 to 200,000 units. Generally the dose given on admission was about 50,000 units intravenously and 20,000 intramuscularly. In a few of the worst cases doses up to double these amounts were given on admission. In those in which there seemed to be an insufficient response in about twelve hours' time, a second dose was given. In the moderately toxic cases the first dose was generally about 20,000 units intravenously and from 3,000 to 16,000 intramuscularly. Occasionally a second dose was required. In the moderate and mild cases no departure was made from the well recognized dosage for moderate and mild diphtheria—viz., 8,000 to 16,000 units intramuscularly. This method of treatment differs from the standard.

Rheumatic Lung.—A new type of pathologic consolidation of the lungs is described by Naish. This consolidation is associated with evidence of active rheumatism elsewhere in the body and usually in the heart. Its most striking feature is an enormous endothelial proliferation, the cells apparently originating from the walls of the alveolar capillaries. The reactive process appears to be identical with that described by Coombs as pathognomonic of rheumatic infection elsewhere, and its specific nature is even more striking. The consolidation may spread through the lungs with great rapidity. There is very little disturbance of the respiratory rate and scarcely any respiratory distress until the consolidation is enormous. If sodium salicylate is given the temperature is increased little, if any. This type of consolidation is said probably to account for the patches of dulness encountered at the left base in association with rheumatic carditis and hitherto attributed to collapse from pressure.

New Method of Administration of Heavy Metals.—Jona utilizes the blood corpuscles as a vehicle for the metal. Introduced metal-laden corpuscles break down at a steady rate, so that the metal is steadily liberated into the blood, probably as a colloidal compound, and is picked out by those tissues having an affinity for it. That a metal so added to a corpuscle is apparently combined with or absorbed to the envelope of the corpuscle can readily be seen by treating a smear preparation of corpuscles combined with lead, bismuth, copper or mercury with a solution of sulphurated hydrogen, when the red corpuscles show a black rim like the tire of a wheel and the surface of the corpuscle is stippled or stained more or less uniformly black. The great surface area of the corpuscles—about 600 square millimeters in 1 cubic millimeter of blood—provides tremendous scope for medication. The patient's blood is drawn off into sodium citrate solution, the corpuscles are centifugalized off, washed, combined with the metal, washed twice or three times until the supernatant fluid is free of metal, and then reintroduced intravenously in a saline suspension. Animal experiments showed that it was possible to administer intravenously in this way doses of lead, copper, mercury and other metals from three to five times as great as would kill the animal if they were introduced intravenously in ordinary solution under the same conditions.

Multiple Ulcers of Small Intestine.—Kanagarayer performed an autopsy on a man said to have committed suicide by hanging. The only lesions found were a series of superficial ulcerations in the small intestine extending from 1 inch from the duodenojejunal flexure to 4 feet from the ileocecal junction. There were four or five ulcers in each foot of intestine, all running transversely, the majority involving the entire circumference of the bowel. Some of them were quite narrow, others ranged from one-half to three-fourths inch in diameter. The base was fairly smooth, and the edges were only slightly raised. The peritoneal surface was not thickened in most cases, but a few showed slight puckering. In their distribution, serpiginous extension in the transverse axis of the bowel, and puckering of the peritoneal surface, they almost resembled tuberculous lesions, except that there was less puckering, the edges and bases were less ragged, and tubercles on the peritoneal surface were absent. There was no evidence of tubercle bacilli in the abdomen or elsewhere. Smears made from scrapings of the bases and edges of ulcers, and of their peritoneal surface, did not show tubercle bacilli. In a second case, nine small superficial ulcers were found in the upper part of the jejunum. In a third case autopsy revealed transverse ulcerations along the whole length of the small intestine extending from the lower third of the duodenum to 2 feet from the ileocecal junction, with from four to five ulcers in each foot of intestine.

Practitioner, London

121: 1-68 (July) 1928

Purblind Medicine. R. Philip.—p. 1.
Recent Work on Vitamins. R. H. A. Plimmer.—p. 9.
Colon Bacillus Nephritis. W. Broadbent.—p. 26.
Wassermann Reaction. J. E. R. McDonagh.—p. 30.
Treatment of Otorrhea. J. A. Keen.—p. 35.
General Paralysis. H. S. Le Marquand.—p. 44.
Operative Treatment of Exophthalmic and Toxic Goiter. D. Kennedy.—p. 53.

China Medical Journal, Shanghai

42: 413-478 (June) 1928

*Intraspinal Injection of Mercurochrome in Case of Epidemic Encephalitis and in Case of Meningitis. Z. Bercovitz.—p. 413.
Diseases Prevalent in Kiulungkiang, Yunnan. C. M. Galt.—p. 420.
Compressed Tablets. J. Cameron.—p. 422.
Origin of Epidemic Encephalitis. A. J. Watson.—p. 427.
Hospital Social Service in Diagnosis and Treatment. I. Pruitt.—p. 432.

Mercurochrome Intraspinally in Epidemic Encephalitis.—Intraspinal injection of 2 cc. of a 0.5 per cent solution of mercurochrome in a case of epidemic encephalitis was evidently beneficial to the patient after the first injection but the second injection was followed by definitely untoward symptoms. Bercovitz reports that the effects of mercurochrome may be cumulative. Intraspinal injection in a case of acute meningitis was not followed by untoward results after three injections.

Presse Médicale, Paris

36: 769-784 (June 20) 1928

*Hydrarthrosis and Traumatic Arthritis. R. Leriche.—p. 769.
Effect of Treatment of Hereditary Syphilis on Ambard's Constant. R. Onfray.—p. 772.

Mechanism of Production of Hydrarthrosis and Traumatic Arthritis and Their Treatment.—In each of three cases of traumatic hydrarthrosis reported by Leriche, the following series of facts was noted: A few days after an accident, which apparently was not going to leave any permanent effects, pain and the functional signs of articular disease appeared. The functional disturbances corresponded to progressive lesions in the synovial membrane of the bone and cartilage. In all three cases the lesions appeared to be identical. In previous experimental work done by the author, he demonstrated that trauma is always followed by active hyperemia in the traumatized tissue. Vasodilation in bones is accompanied by resorption, rarefaction and decalcification. This rarefaction of bone following trauma is not atrophy of disuse, because it occurs in cases in which the involved extremity is not immobilized. If the hyperemic reaction following the traumatism of an articular zone persists for more than ten days, it extends to the synovial membrane, to the bone and to the cartilage. In the synovial membrane a

subacute aseptic synovitis with considerable exudation of synovial fluid develops, resulting in a hydrarthrosis. In the bone an active rarefaction is produced and lacunae of osteoporosis, visible in the roentgenogram, result. When this rarefaction of bone reaches the subchondral zone, it isolates the cartilage, thus producing nutritional disturbances in it. From a consideration of the mechanism involved in the production of traumatic hydrarthrosis, is is evident that massage, mechanotherapy, and everything else that causes hyperemia should be avoided. Rest, cold water and ice are indicated but even after the synovial and osseous lesions have developed, massage and passive mobilization are contraindicated. The author performed periarterial sympathectomy in three cases, with good results.

Schweizerische medizinische Wochenschrift, Basel

58: 597-620 (June 16) 1928

*Possibility of Contagion in Appendicitis. A. Fonio and Rieder.—p. 597.
Liver Diet in Pernicious Anemia. A. Adler.—p. 608.
Continuous Bath Treatment. E. Fritzsche.—p. 611.
Recognition of Staphylococcus Citreus. M. von Jacobi.—p. 613.
*Is Heightened Electrical Resistance of the Body with Rapidly Falling Atmospheric Pressure a Sign of Vagotonia? M. Dugge.—p. 614.
Early Diagnosis of Carcinoma of Uterus. A. Labhardt.—p. 616.

Possibility of Contagion in Appendicitis.—In 49 per cent of 567 cases of acute appendicitis, verified at operation, cases of reliably diagnosed appendicitis occurred among the patients' intimate associates. Most of the cases in associates took place within three years preceding or following the case under consideration. A number of school, house and neighborhood epidemics of appendicitis are instanced and Fonio and Rieder conclude that appendicitis may be spread by contagion. Long and close contact are apparently necessary.

Is Heightened Electrical Resistance of the Body with Rapidly Falling Atmospheric Pressure a Sign of Vagotonia?—On the basis of 200 measurements on eighteen persons, Dugge concludes that a rapid fall in atmospheric pressure or very low pressure acts on human beings in the sense of paralysis of the sympathetic or irritation of the vagus.

Deutsche medizinische Wochenschrift, Berlin

54: 985-1026 (June 15) 1928. Partial Index

Teaching and Learning in Surgery. H. von Haberer.—p. 985. C'cn.
Erythrocytes of Oval Shape as Anomaly. H. Bernhardt.—p. 987.
*Treatment of Endocrine Menstrual Disturbances. E. Martin.—p. 989.
Importance of Lateral Conjugate. J. Koerner.—p. 990.
Leukoplakia of Portio. H. Hinselmann.—p. 992.
Spirochete Agglutination in Serodiagnosis of Syphilis. Y. Mano.—p. 993.
*Müller's Agglutination Reaction in Diagnosis of Syphilis in Pregnant Women. W. H. Treuter.—p. 994.
*Treatment of Catarrhs of Nasal Sinuses, Ear, etc., by Iodine Gas. W. Koellreutter.—p. 995.
Unilateral Hydrophthalmos with Homolateral Vascular Nevus. J. H. Kaiser.—p. 996.
*Dangers from Shaving Eyebrows. W. Feilchenfeld.—p. 997.
Climatic Treatment of Diseases of Children. Häberlin.—p. 997.

Treatment of Endocrine Menstrual Disturbances.—Martin advises treatment directed toward altering the metabolism, particularly change of climate and of altitude. Medicines and gland preparations should be avoided. He reports eight illustrative cases.

Müller's Agglutination Reaction in Diagnosis of Syphilis in Pregnant Women.—In a material of 208 syphilitic and not demonstrably syphilitic pregnant women, a strongly positive agglutination reaction was always confirmed by a positive Wassermann reaction. A positive agglutination reaction of the first or second degree of strength was obtained in some cases in which the Wassermann reaction was negative and there were no indications of syphilis and in cases of treated syphilis in which the Wassermann reaction had changed from positive to negative.

Treatment of Catarrhs of the Nasal Sinuses, Ear, Etc., by Iodine Gas.—Koellreutter records excellent results obtained by inhalation of iodine gas (Heublein's method) in acute catarrhs, acute suppurations of the nose, nasal sinuses and ear, acute stomatitis and glossitis, and vasomotor rhinitis. Fresh operative wounds also were favorably influenced. The results in chronic catarrhs and suppurations are not so outstanding, but are promising. He uses the method also in tuberculosis of the pharynx and larynx. He employs a wide-necked bottle containing substances giving off iodine gas; a catalyzer speeds up the process. Metallic iodine must not be used, as gas from it has a caustic action.

Dangers from Shaving Eyebrows. — The eyebrows, Feilchenfeld points out, perform an important function in protecting the eyes from dust and sweat and their partial removal may be the indirect cause of conjunctivitis, blepharitis and abscesses in the eye region.

Deutsche Zeitschrift für Chirurgie, Leipzig

209: 289-424 (June) 1928

Experiences with Various Anesthetics. L. Maiditsch.—p. 289.
Effect of Activated Ergosterol on Callus in Healthy Experimental Animals. H. Hellner.—p. 307.
*Effect of Avitaminosis on Healing of Fractures. S. P. Schilowzew.—p. 320.
*Late Results of Bone Resection for Rachitic Deformities. W. Schmidt.—p. 326.
*Congenital, Hereditary, Bilateral Ankylosis of Elbow. P. Siwon.—p. 338.
Disease of Metatarsus. A. Greifenstein.—p. 350.
Treatment of Complicated Arm and Leg Fractures. H. Schmidt.—p. 382.
Treatment of Luxatio Femoris Centralis. J. Amberger.—p. 391.
End Results of Supracondylar Wedge-Shaped Osteotomy of Femur for Genu Valgum: Etiology and Pathology. H. Junghans.—p. 394.
Puncture of Right Orbit with Pitch Fork: Involvement of Brain. E. Walchshofer.—p. 397.
Transplantation of Fleshy Tip of Toe to Tip of Nose. H. Kurtzahn.—p. 401.
Operation for Gynecomasty and Pendulous Breast. H. Kurtzahn.—p. 403.
Simultaneous Occurrence of New Foci of Tuberculosis and Disseminated Carcinoma Metastases. F. Sturm.—p. 406.

Effect of Avitaminosis on Healing of Fractures.—According to Schilowzew, experimental C avitaminosis retards callus formation considerably. A diet rich in vitamin C caused speedy healing—whereas a diet poor in antiscorbutic vitamin led to spontaneous refracture of a healed fracture. He advises a diet rich in vitamins A and C in cases of pseudarthrosis, as it increases the regenerative power of bone.

Late Results of Bone Resection for Rachitic Deformities.—Schmidt reports on eleven cases in which operations were done to correct bowing of the tibia caused by rickets. The results were perfect. The bone—even in severe cases of rickets—had a high regenerative power, fully the equal of that of normal bone.

Congenital, Hereditary, Bilateral Ankylosis of Elbow.—The elbow ankylosis in Siwon's case was traced through four generations. In the first three generations the males passed on the ankylosis to the female offspring. Two of these remained unmarried. The third married a healthy man, free from anomalies and offspring of a healthy family, but her daughter inherited the ankylosis.

Folia Haematologica, Leipzig

35: 1-200 (Nov.) 1927

*Recurrence of Hemolytic Attacks in a Case of Hemolytic Icterus Treated by Splenectomy. O. Roth.—p. 1.
Case of Lymphatic Pseudoleukemia with Osteosclerosis Terminating in Acute Lymphatic Leukemia. S. M. Zypkin.—p. 7.
*Effect of Active Iron on Body Weight and Oxygen Consumption. W. Arnoldi.—p. 21.
Oxydases and Peroxydases of Red Bone Marrow Not Fixed to Hemoglobin. A. Neumann and E. Gratzl.—pp. 30 and 38.
*Poikilocytosis in Various Diseases. E. S. Kanellis.—p. 65.
*Effect of Arsenic and of Iron on Amount and Character of Blood. G. Petrányi.—p. 79.
Determination of Diameter of Erythrocytes in Man Under Physiologic and Pathologic Conditions. G. Holler and O. Kudelka.—p. 97.
Progressive Postinfectious Erythrophthisis. H. Baar.—p. 111.
Determination of Erythrocyte Fragility by Cohnreich's Method. F. Roulet.—p. 116.
Reactions of Lymph Nodes to Various Dyes Injected Intravitally. J. S. Latta and R. Z. Schulz.—p. 119. In English.

Recurrence of Hemolytic Attacks in a Case of Hemolytic Icterus Treated by Splenectomy.—Good results followed splenectomy in the case of icterus reported by Roth, but three years after the operation and again a little more than a year later the patient suffered attacks of jaundice which showed evidence of being true hemolytic attacks, although this was not verified by blood examination. While, in general, attacks of hemolysis are connected with the spleen, the author believes that the activity of this organ may, in part at least, be taken over by the mesenteric lymph nodes. Roentgenologic examination in this case showed greatly enlarged mediastinal lymph nodes, which, like the mesenteric lymph nodes, may act vicariously for the spleen.

Effect of Active Iron on Body Weight and Oxygen Consumption.—In experiments on a rat, Arnoldi found that when magnetic active iron oxide was given daily, there was a marked increase in weight and in oxygen consumption. Two out of twelve patients who were given active nonmagnetic iron carbonate showed a rise in basal metabolism. In the majority of patients there was a gain in weight, though this was partly attributed to good care, food, etc. Clinically it would appear that the iron had an energizing effect on metabolism, as seen, for example, in improvement in evacuation of the bowels.

Occurrence of Poikilocytosis in Various Diseases.—Kanellis made blood examinations in 100 cases of various diseases and found poikilocytosis in one case of secondary anemia with latent syphilis, one case of malignant granuloma, one case of carcinoma of the stomach, two cases of ulcer of the stomach, one case of chronic arthritis, and one case of multiple sclerosis. He regards the occurrence of poikilocytosis as being due not to the primary disease, but to the secondary anemia. That poikilocytosis is independent of the hemoglobin content and erythrocyte count was shown by one case in which both hemoglobin and erythrocyte count were normal. The combination of poikilocytosis and anisocytosis was found to be frequent. Experimentally, poikilocytosis was produced by heating. Mixing blood with sodium chloride solutions in varying concentration, and mixing blood from normal persons and from persons suffering from pernicious anemia failed to produce poikilocytosis. It was produced, however, by mixing healthy blood with lecithin and cholesterol, substances which circulate in human blood. This shows that poikilocytosis originates not only in the bone marrow, as explained by Arneth's theory, but also in the circulating blood.

Effect of Arsenic and of Iron on Amount and Character of Blood.—In experiments on dogs, Petrányi found that arsenic as well as iron caused an absolute increase in the amount of blood in circulation, chiefly in the quantity of blood cells. The average volume of the individual new-formed cells was smaller. The color index was higher. There was found to be a certain relationship between body weight and resistance of the blood cells, the latter decreasing as the former increased, and vice versa. No regularity could be ascertained as regards changes in hydrogen ion concentration and viscosity.

36: 1-144 (March) 1928

Lymphocytic Elements of Bone Marrow in Pernicious Anemia. A. Krjukof and A. Korovnikof.—p. 1.
Effect of Mud-Baths on Arneth Blood Picture. B. G. Rubinstein.—p. 5.
*Blood Regeneration After Repeated Hemorrhage. L. Hollaender and S. von Pelláthy.—p. 12.
Pseudospirochetes in Human Blood. A. Grassberger.—p. 17.
*Blood Picture in Human Trichinosis. W. Behr.—p. 25.
Germinal Centers of Lymphatic Organs. F. J. Lang.—p. 31.
Erythrocytic Membrane as Colloidal System. O. B. Lepeschinskaja.—p. 41.

Regeneration of Blood Following Repeated Hemorrhage.—To determine the effect of repeated hemorrhage on the regeneration of blood, Hollaender and Pelláthy studied the blood picture of a sheep from which 175 cc. of blood for hemolysin in Wassermann tests had been taken biweekly over a period of thirty-eight months. The animal was about 5 years old and weighed 45 Kg. During the thirty-eight months, therefore, the animal had lost four times its total volume of blood. In the human being this would be equivalent to removing 260 cc. of blood every two weeks. Blood from this sheep and from a control sheep from which no blood had been withdrawn previously was examined. In the erythrocyte picture of the sheep from which blood had been removed systematically for three years no sign of modified regeneration was noted: the number, morphology and hemoglobin content of the erythrocytes were identical with those of the control animal. There was likewise no difference in either the number of thrombocytes or the osmotic resistance of the erythrocytes.

Blood Picture in Human Trichinosis.—From blood examinations made in four cases of trichinosis, Behr concludes that the three stages of trichinous infection frequently cannot be differentiated from each other by the blood findings. For the first stage (intestinal symptoms) characteristic changes in the blood have not been described. The appearance of hyperleukocytosis and eosinophilia indicates the commencement of the second stage (muscular symptoms). In severe cases eosinophilia may be absent, whereas hyperleukocytosis is present even here. The number of lymphocytes frequently decreases in the second stage. The crisis comes in this stage; the blood picture shows an increase in the eosinophils and lymphocytes. The third stage (recovery, encapsulation of trichinae) is characterized by a slow diminution in the leukocytes and an increase in the lymphocytes.

Klinische Wochenschrift, Berlin

7: 1065-1112 (June 3) 1928. Partial Index

Use of Ascaris Eggs in Radiologic Dosage. H. R. Schinz and A. Zuppinger.—p. 1070.
*New Tests for Carcinoma. K. Atzerodt.—p. 1076.
Active Principle of Pollen Extract. L. F. Loeb.——p. 1078.
Treatment of Seasickness. M. H. Fischer.—p. 1079.
Relation of Serum Globulin to Antibodies. O. Ornstein.—p. 1081.
*Cholesterol-Fat Test in Cirrhosis of Liver. A. W. Elmer and M. Scheps. —p. 1083.
Prophylaxis and Therapy of Rickets. R. Lenneberg.—p. 1084.
Chemistry of Gaucher Substance. E. Epstein and H. Lieb.—p. 1085.

Clinical Value of New Tests for Carcinoma.—From an experimental and clinical study of Suranyi's albumin reaction and Gross' color reactions, Atzerodt concludes that, although both are of value in the diagnosis of cancer, neither of them is specific.

Cholesterol-Fat Test in Cirrhosis of Liver.—Elmer and Scheps studied the absorption of cholesterol and fat in nine persons with normal livers and in twelve patients with pathologic livers—seven cases of cirrhosis—by giving them 5 Gm. of cholesterol dissolved in 100 Gm. of olive oil, per os, and examining the blood serum four hours later, as recommended by Bürger and Habs. These investigators maintain that, in cases in which the liver is normal, a distinct, creamy cloudiness of the serum will be noted as the expression of an alimentary lipemia and cholesteremia, whereas in cases of cirrhosis of the liver the blood serum will remain clear and show no change in its cholesterol content. As a result of their studies, the authors conclude that the cholesterol-fat test gives no certain information as to the condition of the liver. The positive test (no clouding of the blood serum and no marked fluctuations in the total cholesterol content) does not prove that the person has cirrhosis of the liver, since a positive result is obtained in other diseases of the liver and even in some persons with a normal liver.

7: 1113-1160 (June 10) 1928. Partial Index

Allergy, Anaphylaxis and Idiosyncrasy in Dermatology. B. Bloch.—p. 1113. C'cn.
*Formation of Antirachitic Vitamin in Absence of Light. A. Schittenhelm and B. Eisler.—p. 1118.
Atypical Pneumonia with Good Outcome in Infants. E. Moro.—p. 1119.
Hormone of Suprarenal Cortex. M. Goldzieher.—p. 1124.
Rational Insulin Treatment on Basis of Day's Blood Sugar Curve. A. Gottschalk and A. Springborn.—p. 1129.
"Gonorrheal Hyperkeratoses" Without Gonorrhea. A. Buschke.—p. 1133.
*Symptomatology of Acute Diseases with Blood Destruction. W. Borchardt and C. Tropp.—p. 1136.
Heart Hormone: Reply. R. Rigler and F. Tiemann.—p. 1137.
Pathogenesis of Icterus Neonatorum. G. Lenart.—p. 1137.
Oxydase Ferment, Storable by Cells. G. Wallbach.—p. 1138.

Formation of Antirachitic Vitamin in Absence of Light.—Schittenhelm and Eisler previously determined the presence of vitamin D as well as of vitamins A, B and E, in the first sproutings of barley. They are now able to add that in these sprouts there is no preliminary stage (provitamin), which can be activated by light energy, of the antirachitic substance. Ultraviolet irradiation did not increase the antirachitic activity. In certain cases in which the irradiation was particularly intense or its action was prolonged, a decrease in the antirachitic activity was noted. The sprouting of the barley took place in dark rooms, so all question of an action of light can be excluded. The authors have as yet been unable to demonstrate ergosterol in the sprouts. Barley itself is inactive. Apparently, vitamin D can originate in the process of germination and the antirachitic substance is not dependent on light energy.

Symptomatology of Acute Diseases with Blood Destruction.—From animal experiments, Borchardt and Tropp conclude that the fever and chills in such diseases as blackwater fever, paroxysmal hemoglobinuria, etc., may be caused by the stroma of the erythrocytes, suddenly freed in large quantities, but not by the hematin. In physiologic doses the latter had no effect on the organism. The globin may be responsible for the symptoms of shock that occasionally occur in these diseases.

Medizinische Klinik, Berlin

24: 883-920 (June 8) 1928. Partial Index

*Treatment of Adiposity. F. Schellong.—p. 883.
Industrial Lead Poisoning. B. Chajes and C. Lewin.—p. 885.
*Mode of Action of Blood Transfusion in Thrombopenic Purpura. H. Engel.—p. 888.
*Clinical Study of Tetanus. J. Eiselt.—p. 891.
Disease Mortality Curves in Breslau (1910-1927). Rosenfeld.—p. 893. C'cn.
*Case of Cysticercosis of Brain. F. Schmitz.—p. 894.
Physician and Morphinism. K. Kroner.—p. 896.
Body Fluids in Therapeutic Malaria. V. Kafka.—p. 897.
Apparatus for Electroscopy of Gastric Digestion. C. Funck.—p. 898.

Treatment of Adiposity.—Meat should hold the first place in a diet for obesity, Schellong advises, because of its stimulative effect on cell activity. The intake of fluids should be strictly limited, since in adiposity the tissues tend to retain water. For the first ten or fourteen days he gives a diuretic.

Mode of Action of Blood Transfusion in Thrombopenic Purpura.—This question was studied by Engel in four patients (two with acute, one with chronic thrombopenia and one with symptomatic thrombopenia in pernicious anemia). About twenty transfusions were made. He concludes that blood transfusion does not act as an "alterative" therapy, with stimulation of the megakaryocytes, nor as a substitution treatment in respect to blood platelets, but mainly as a substitution treatment in respect to erythrocytes. The transfused platelets perish rapidly. The transfused erythrocytes serve to tide the patient over the period of danger till thrombopoiesis starts again. The styptic action is perhaps due partly to products of platelet decomposition, partly to parenteral incorporation of large quantities of serum protein.

Clinical Study of Tetanus.—In the first of the two cases reported by Eiselt, symptoms appeared seven days after a small, superficial wound in the finger and two days after a wound in the thumb of the other hand caused by a splinter of wood. On the third day of illness the skin wound in the finger was excised, two splinters were removed from the thumb, 100 units of tetanus antitoxin (Höchst) was injected and the wounds were irrigated with antitoxin solution. Death took place on the next day. In the second case, the patient, in falling from a ladder, received a deep, lacerated wound on the upper lip from a dead branch of a tree. Five days later facial spasms occurred. There was malaise and severe sweating. On the next day the lower jaw swelled and there was spasm of the jaws, diarrhea and vomiting set in. Two days later the rigidity had become general, the left eye and the right side of the face were distorted, the jaws were set and the neck was stiff. On the following day risus sardonicus, clonic contractions of the muscles of the face, right facial paralysis, paresis of the levator palpebrae superioris, dysphagia and inability to speak were present. On the evening of this day, nine days after the injury, the patient was brought to the clinic and the wound was thoroughly curetted, irrigated with antitoxin solution and left open, 100 units of tetanus antitoxin (Höchst) was injected into the pectoral muscle. After an interval of one day, another 100 units was injected into the thigh, and, on the next day, 40 units. The wound was irradiated with ultraviolet rays and 10 Gm. of a 20 per cent solution of magnesium sulphate was given intravenously. Sedatives were also administered. From the eighth day of illness he received sodium salicylate every two hours, two enemas daily of magnesium sulphate and a warm full bath every day. The patient recovered. The baths, begun at a time when the condition seemed hopeless, proved to have a remarkably quieting effect. Only two ultraviolet irradiations (seven minutes each) were given, since they were followed by exacerbation of symptoms, but the author believes that they did good. With the magnesium sulphate he aimed at diminishing the electrotonus of the nerve and muscle cells and of the spinal cord and brain by bringing large quantities of earthly alkalis into the blood.

Case of Cysticercosis of Brain.—A girl, aged 9, had had severe headaches and vomiting for a period of three months. Disturbances of vision, with occasional double vision, followed. According to the parents, the child had lain insensible for one day. There were intervals of apparent well being. On examination, bilateral abducens paresis and bilateral choked disk were found. A roentgenogram of the cranium showed nothing abnormal. Trepanation was performed in the interest of the child's sight. Scattered over the entire palpable surface of the brain were thin-walled cysts, in size from a pea to a bean, containing concretions, apparently calcareous. Since removal of all was impossible, three were taken out for examination and the skin was sutured. The specimens removed proved to be cysticercus cysts; the concretions were calcified cysticerci. The choked disk on the side operated on improved in the first few days. The patient was then removed and was lost sight of.

Monatsschrift für Geburtshülfe u. Gynäkologie, Berlin

79: 1-174 (May) 1928

* Diagnosis of Pregnancy Rendered Difficult by Endocrine Disturbances. R. Zimmermann.—p. 1.
*Calcium and the Menstrual Cycle. A. Bock.—p. 9.
Anemia of Pregnancy Resembling Pernicious Anemia. K. Atzerodt.—p. 16.
Diagnosis of Extra-Uterine Pregnancy. B. A. Iwanoff.—p. 26.
Prognosis in Puerperium. H. Hoffmann and A. Dubnjakowa.—p. 34.
Leukoplakia of Portio. H. Hinselmann.—p. 41.
False Cyst of Uterus Following Radiation of Portio. H. Faerber.—p. 45.
Plastic Displacement of Portio. K. Matzdorff.—p. 48.
Schubert's Operation for Prolapse and Retroflexion of Uterus. W. T. Wiemer.—p. 51.
Histogenesis of Primary Carcinoma of Fallopian Tube. J. Gittelson.—p. 53.
Congenital Universal Hydrops. W. Lahm.—p. 63.
Etiology of Congenital Genu Recurvatum. A. Sanders.—p. 68.

Diagnosis of Pregnancy Rendered Difficult by Endocrine Disturbances.—Zimmermann describes a case of myxedema which developed after the puerperium, was relieved by thyroid treatment, but appeared again with another pregnancy and became so severe that the pregnancy was interrupted and tubal sterilization carried out. Under treatment the myxedema again cleared up. After about nine months, however, all the subjective and objective signs of another pregnancy appeared. Especially noteworthy was the enlargement of the uterus, which also presented Hegar's sign. Colpohysterectomy, however, showed that the uterus was empty. The symptoms which made pregnancy appear indubitable, can, according to the author, be attributed only to the endocrine disturbance.

Calcium and the Menstrual Cycle.—In a series of tests for blood calcium made on four women, Bock found that during menstruation itself the calcium content showed no deviation from that of the intermenstrual period. In three cases there was a rise in calcium concentration three or four days before menstruation. In the fourth case, however, the lowest value was on the first day of menstruation and the two or three days preceding. On the first or second day of menstruation he tested twenty women who were entirely well or had diseases apparently unrelated to calcium metabolism and found that the average calcium value was practically the same as that of twelve normal persons whom he had previously examined. He believes that the fluctuation in calcium value before menstruation is related to the ovaries and the parathyroid gland, since menstruation depends on the former and the latter influences the calcium concentration of the blood. As to the influence of the vagotonic system on calcium value, he does not believe that there is any regularity as to predominance of either the vagal or sympathetic system at the time of menstruation, this being a matter of individual constitution.

Münchener medizinische Wochenschrift, Munich

75: 1023-1062 (June 15) 1928. Partial Index

"Normalizing" Series of Figures. F. Moritz.—p. 1023.
Localization of Gonorrheal Arthritis. J. K. Mayr and B. Bremer.—p. 1024.
Origin and Prevention of Scoliosis. F. Bauer.—p. 1027.
*Suprarenal Implantation in Addison's Disease. A. Reinhart.—p. 1027.
Location of Anthrax Pustules on Human Skin. P. Graf.—p. 1028.
Method of Examining for Eggs of Worms. F. Kortenhaus.—p. 1029.
*Combined Dextrose-Insulin Treatment in Diabetes. O. Pucsko.—p. 1032.
Warning Against Hot Air Treatment of Gonorrhea of Cervical Canal. H. Geyer.—p. 1034.
*Treatment of Pulmonary Tuberculosis by Induced Oxygen Emphysema of Skin. R. Marder.—p. 1035.
*Transient Diabetes in Febrile Diseases. E. Wiechmann.—p. 1035.
Fixation of Uterus in Pathologic Anteflexion as Birth Complication. H. Küstner.—p. 1036.
Decapitation of On-Coming Head. W. Sigwart.—p. 1038.
Origin of Eclampsia. N. Ellerbroek.—p. 1039.

Suprarenal Implantation in Addison's Disease.—Reinhart transplanted a freshly removed suprarenal from a patient with tuberculosis of the kidney into a patient in a severely

cachectic stage of Addison's disease on a tuberculous basis. After a few days, the appetite improved, the skin peeled, the blood pressure rose. At the end of three weeks there was a relapse, after which improvement again set in, menstruation returned and the blood sugar became normal. The patient continued to receive metallic salts and arsenic for the tuberculosis and suprarenal substance. At the end of five months she was able to take a journey. At the end of six months improvement is maintained and she is gaining in weight. Reinhart's hope is that internal treatment will bring the suprarenal tuberculosis of the patient to a standstill before the transplanted gland ceases to be active; otherwise, a second gland transplantation will be made.

Combined Dextrose-Insulin Treatment in Diabetes.—Cases of diabetes with large amounts of ketone bodies in the urine, which have not responded to diet and insulin alone, are treated by Pucsko by insulin combined with dextrose. He finds the treatment to exert a beneficial and durable influence on the metabolism and on the subjective condition of the patient. When the ketone bodies have disappeared from the urine, treatment may often be continued with insulin alone. The combined treatment does not raise the blood sugar. Three illustrative cases are reported at length.

Treatment of Pulmonary Tuberculosis by Induced Oxygen Emphysema of Skin.—Marder has seen good results from injections of oxygen into the subcutaneous fatty tissue in all three stages of pulmonary tuberculosis.

Transient Diabetes in Febrile Diseases.—Wiechmann reports a case of pneumococcus meningitis and one of lobar pneumonia with temporary glycosuria and glycemia which cannot be explained as of alimentary origin. He explains these phenomena in the first case by injury to the sugar-regulating center in the medulla oblongata by the meningitis, in the second case by a passing toxic injury to the islands of the pancreas.

Strahlentherapie, Berlin

29: 1-204 (May 31) 1928. Partial Index

Esophylactic Nature of Action of Light on Skin. A. Memmesheimer. —p. 1.
Dermatoses Due to Light. W. Lipschitz.—p. 9.
Use of Glass Permeable to Ultraviolet Rays. C. Dorno.—p. 20.
*Effect of Roentgen Rays on Inflammation. R. Motojima.—p. 30.
Action of Serum from Cancer Patient on Cancer. O. H. Bucher. —p. 71.
Effect on Child of Radiotherapy of Cancer of Cervix in Pregnancy. R. Zimmermann.—p. 108.
*Radiotherapy of Sarcoma of Tongue: Case. A. Simons.—p. 122.
Bactericidal Action of Roentgen Rays. W. E. Pauli and E. Sulger. —p. 128.
Effect on Vitamin-Free Food of Exposure to Roentgen Rays. F. Rost and W. Dieterich.—p. 152.
*Roentgenotherapy of Omarthritis. S. Grauer.—p. 172.

Effect of Roentgen Rays on Course of Inflammation.—From experiments performed on rabbits, Motojima concludes: 1. The favorable action of roentgen rays on inflammation can be demonstrated in animals by means of Schäffer's thread method. 2. The favorable effect manifests itself by a diminution in the inflammatory infiltrate about the site of irritation. 3. Dosage is elastic, varying according to the individual and the local condition. 4. Local and general processes play a rôle in the action. 5. The general processes belong to the group of nonspecific increases in immunity. The local consist in vasodilatation, hyperemia, increased lymph circulation and local immunity processes. 6. Abscess formation can be favored, particularly by strong dosage. 7. The action of roentgen rays on inflammation resembles most the action of heat and least the action of cold. 8. Combined heat and roentgen-ray therapy in suitable doses is more effective than either heat or roentgen-ray therapy alone.

Radiotherapy of Sarcoma of the Tongue: Case.—Simons reports a case of sarcoma of the tongue with lymph gland metastases in a man, aged 56, that was cured by combined radium and roentgen-ray therapy. In the six months since the growth was first noted, the patient's weight had dropped from 185 to 99 pounds. At the time treatment was begun, he was cachectic, complained of difficulty in swallowing and of pain located in the left side of the head, particularly in the region behind the left ear, and radiating to the occiput. When the tongue was protruded it deviated to the left and its left posterior portion was seen to contain a tumor-like infiltration. In the left submaxillary region there was a moderately hard, indolent, fixed mass, the size of a pigeon's egg. Several pathologists who examined sections obtained from two biopsies diagnosed the condition as lymphoma or lymphosarcoma, but the clinical course of the growth had proved its malignancy. The primary growth was treated with radium and the metastases in the cervical lymph glands were given roentgen irradiation. Four weeks after beginning the treatment, both the primary and the secondary lesions had disappeared. During the six and one-half years that have elapsed since treatment, he has gained 51 pounds and has been completely free from symptoms.

Roentgenotherapy of Inflammations of the Shoulder Joint.—Grauer studied the effect of roentgen irradiation on six cases of omarthritis. He concludes that roentgen-ray treatment of inflammations of the shoulder joint is one of the most gratifying of the uses of roentgenotherapy. The more the inflammatory component dominates the arthritic symptom complex, the more striking is the effect of the treatment. The relief of symptoms is permanent.

Wiener klinische Wochenschrift, Vienna

41: 833-868 (June 14) 1928. Partial Index

*Results of Goiter Prophylaxis. J. Wagner-Jauregg.—p. 833.
One Hundred and Fifty Successive Goiter Operations Without a Death. F. Kaspar.—p. 835.
*Serum Albumin in Epilepsy. F. Frisch.—p. 838.
Nature of Gerlach and Kraus' Granules in Central Nervous System in Experimental Poliomyelitis. F. Paul.—p. 843.
Syphilitic Mesaortitis. N. Jagić.—p. 845.
Results of Malaria Treatment of Syphilis. V. Mucha and F. Mras. —p. 847.
*Diathermy Treatment of Local Pruritus. O. Hopfinger.—p. 849.
Clinical Study of Lead Poisoning. I. S. Matussewitsch.—p. 849.
*Early Diagnosis of Carcinoma of Cervix. H. Heidler.—p. 852.

Results of Goiter Prophylaxis.—From Austria Wagner-Jauregg reports a decrease in goiter in school children and in operations for goiter. The decrease is greatest in the younger children and in pronounced goiters. He is inclined to attribute an important part of the decrease to the introduction of iodized salt. In the last quarter of 1926 about 47 per cent of the salt used in Vienna contained iodine.

Serum Albumin in Epilepsy.—In Frisch's experiments on dogs, the readiness to react by convulsions to cortical irritation was reduced by two thirds by treatment with a poison (ricin) that increases serum globulin at the expense of serum albumin. A similar result was brought about by starvation, which acts similarly on the serum proteins. In researches on epileptic patients, Frisch found it more difficult to influence the albumin-globulin ratio, but in cases in which he was able to bring about a temporary shifting in favor of globulin, the attacks ceased for the time.

Diathermy Treatment of Local Pruritus.—Eleven cases of stubborn pruritus were treated by Hopfinger with diathermy. In eight, cure was obtained; in two, cure was not complete at the end of the course and the treatment is being continued with one sitting weekly; improvement is evident. In only one case did it fail. The treatment is contraindicated in the presence of eczematous or pyogenic lesions in the skin.

Early Diagnosis of Carcinoma of the Cervix.—The true picture of beginning cervical carcinoma, Heidler insists, is leukoplakia of the portio. There is no known leukoplakia of the portio from which, sooner or later, carcinoma does not develop.

Zeitschrift für Geburtshülfe u. Gynäkologie, Stuttgart

93: 341-560 (May 11) 1928

Hidradenoma of Vulva. A. Blau.—p. 341.
Leukorrhea as Symptom. H. Hinselmann.—p. 349.
Glycogen Content of Uterine Carcinoma and Squamous Cell Proliferations in Region of Os Externum. W. Lahm.—p. 356.
*Douglas Puncture. P. Rissmann and C. Schmidt.—p. 363.
*Temporary Sterilization of Women. A. Littauer.—p. 369.
*Serologic Diagnosis of Pregnancy. G. K. F. Schultze.—p. 403.
Ultrafiltrable Calcium, Potassium and Sodium in Normal and Pathologic Pregnancy. M. Rodecurt, A. Koenig and A. Regensburger. —p. 410.
Early Diagnosis and Treatment of Syphilis in Mother and Child. E. Philipp.—p. 443.
*Histologic Examination of Uterine Wall After Third Cesarean Section. W. Bach.—p. 453.
Contracted Pelvis. H. Baumm.—p. 462.
Condition of Intramural Portion of Tube in Chronic Inflammation of Adnexa. H. Lempert.—p. 471.

Experiments and Experiences with Douglas Puncture.—On the basis of sixty cases, as well as of investigations on twelve cadavers, Rissmann and Schmidt consider Douglas puncture a safe and valuable diagnostic measure and recommend that its application be extended. In 71.7 per cent of the cases positive results were obtained and in 28.3 per cent, negative. There were no negative cases, however, in the sense that infection was spread or that there was no help in diagnosis. The cases included extra-uterine pregnancy, purulent adnexitis, Douglas abscess, follicular cysts, peritonitis or suspected peritonitis, purulent parametritis, and other obscure conditions. A brief description is given of technic and instruments used. In almost all cases puncture was made through the vagina; in only one out of sixty was the abdominal wall punctured.

Temporary Sterilization of Women.—Various methods are discussed by Littauer. Hormonal sterilization has been tried on animals, but has not yet been found applicable to human beings. Operative measures are more certain and less dangerous than roentgen rays or radium. Stoeckel's method of displacing the fallopian tubes into the inguinal canal is recommended especially after artificial abortion in a first pregnancy and when the condition of the patient demands the manipulation that will cause the least shock. Sellheim's method of burying an intact tube in the broad ligament is practicable after laparotomy, especially when the operation must be done quickly. Still better, in the author's opinion, when the patient's condition permits of a longer operation, is van de Velde's displacement of the ovaries into the vesico-uterine pouch. In order to avoid the possibility of injury to the ovaries, the author has used the same principle, but has displaced the tubes instead of the ovaries, and then closed the vesico-uterine cavity by a covering of peritoneum. The cavity may be reopened later in order to permit of conception. The author has employed this procedure nine times with favorable results, although he has not yet had an opportunity of testing any of the cases by relaparotomy.

Serologic Diagnosis of Pregnancy.—Schultze tested two modifications of the Abderhalden reaction by Lüttge and von Mertz. The first method, the alcohol substratum reaction, was found to be useless, correct results being obtained in only 60 per cent of the 218 cases tested. The second method, the so-called alcohol extract reaction, making use of placental extract, proved more reliable. Correct results were obtained in 80 per cent of 100 cases. In the case of pregnant women, 90 per cent were correct; of nonpregnant, only 75 per cent. The large number of false results in nonpregnant women is explained as due to the presence of carcinoma or of some inflammatory condition causing an abnormal change in the serum.

Histologic Examination of Uterine Wall After Third Cesarean Section.—In the case reported by Bach, following a third cesarean section, a supravaginal amputation of the uterus was performed and the specimen was examined histologically. The perimetrium and mucosa were found to be normal. The muscle wall around the place of section had not become thin, but instead there was a brownish, wedge-shaped discoloration in the middle of the incised surface. There were signs of extravasated blood here and the tissue was more fragile, a tear occurring, in spite of care in handling. Signs of former cesarean sections were seen in the peculiar course of the muscle fasciculi. The specific organic elements, especially the smooth muscle fibers, were completely regenerated. After both the second and third cesarean sections there was fever with thrombosis, but healing was undisturbed."

Zeitschrift für Krebsforschung, Berlin

26: 439-530 (May) 1928. Partial Index

Nuclear Measurements in Tar Cancer. W. Epantschin.—p. 439.
*Comparative Value of Wertheim and Schauta Operations. G. G. Ter-Gabrielian.—p. 450.
*Intensification of Action of Isamine Blue. R. Roosen.—p. 461.
Biology of Cancer Cells Cultured in Vitro. A. Fischer.—p. 463.
Effect of Tar-Painting on Viscera of Mice. W. Berghoff.—p. 468.
Inoculation of Malignant Tumors in Mice. L. Heidenhain.—p. 492.
Generalized Bone Marrow Cancer. H. Lewin.—p. 494.
*Bactericidal Action of Human Serum on Bacillus Tumefaciens. F. Kauffmann.—p. 519.

Comparative Value of Wertheim and Schauta Operations in Cancer of Uterus.—On the basis of a study of 212 cases (eleven personal) of cancer of the uterus in which either the Wertheim or the Schauta operation was performed, Ter-Gabrielian concludes: 1. The general percentage of recurrence over the total period of observation is about the same for both operations. 2. In women operated on according to Wertheim, recurrence is more frequent in cancer of the vaginal portion and less frequent in cancer of the body of the uterus. 3. In women operated on according to Schauta, recurrence is most frequent in cancer of the cervical canal. 4. In cases in which the Wertheim operation is used, recurrence is observed most frequently where the process has a limited localization. 5. In cases in which the Schauta operation is used, recurrence is observed most frequently where cancerous infiltrates and metastases were present in the surrounding cellular tissue and glands. 6. The Wertheim and Schauta operations are of equal value in the surgical treatment of cancer of the uterus, but if one wishes to obtain the best permanent results one must master the modern technic of both operations and be influenced by individual variations in the patient in choosing the method to be used. 7. Since neither operative method results in radical cure in cancer of the uterus, great attention should be directed to the use and perfection of the radium and roentgen-ray treatments.

Intensification of Action of Isamine Blue on Malignant Tumors.—In previous experiments Roosen noted that the curative action of isamine blue runs parallel with the degree of its storage in tumors, that certain tumors, particularly those of the gastro-intestinal tract, store up very little, and that it is impossible to increase this insufficient storage by increasing the amount of isamine administered. Working on the established principle that the vital staining of an organ increases with the increase in its functional activity, he found that the storage of the dye in the stomach of a mouse could be increased if the dye were injected while an electric current was being passed through the stomach. The course of the current was marked by a blue streak extending completely through the body. As yet, the author has had no opportunity to try diathermy in the intensification of the action of insamine blue on malignant tumors in human beings.

Bactericidal Action of Human Serum on Bacillus Tumefaciens.—In studies on the action of serum from six healthy persons, nineteen persons suffering from diseases other than cancer, and sixteen cancer patients, Kauffmann found that as a rule active human serum shows considerable bactericidal action on *Bacillus tumefaciens* of Smith. Serums from cancer patients did not differ essentially in this respect from the serums of healthy persons and persons suffering from other diseases, even though their average action was more marked.

Zentralblatt für Chirurgie, Leipzig

55: 1601-1664 (June 30) 1928

*Pinching of Wall of Cecum, with Helminthiasis and Cecum Mobile. C. Häbler.—p. 1603.
Operation or Extension in Treatment of Compression of Spinal Cord by Scoliosis? A. Lehrnbecher.—p. 1606.
Volkmann's Oblique Fracture of Lower End of Tibia with Pyramidal Fragment. E. Wendt.—p. 1608.
Permanent Gastric Fistula. E. N. Stahnke.—p. 1609.
*Intra-Abdominal Hemorrhages from Both Ovaries. O. Orth.—p. 1612.
*Treatment of Inflammations by Alkalization. J. Lukomsky.—p. 1613.
Rupture of Varicocele by Indirect Trauma. A. Lehrnbecher.—p. 1615.
Carcinoma of Pylorus Simulating Ileus. E. Haim.—p. 1616.

Pinching of Wall of Cecum, with Helminthiasis and Cecum Mobile.—Häbler's patient presented symptoms which led him to operate for acute appendicitis—but the appendix was virtually in a normal state. The cecum was somewhat movable. The ascending colon at this point was dilated and its anterior wall was much thickened—which accounted for a mass which had been palpated before the operation. The colon between the two lateral longitudinal muscle bands, all of the cecum and the appendix were removed. The ileocecal valve was conserved. The mucosa of the extirpated bowel contained numerous tricocephali, and *Oxyuris* was found in the cecum and appendix. These parasites are regarded as being the cause of the inflammation in this case, which is said to be the first on record of association of *Tricocephalus* and *Oxyuris*.

Intra-Abdominal Hemorrhages from Both Ovaries.—Orth removed the appendix of a woman, aged 25. The clinical course was normal for the next four days. During the night of the fourth day a uterine bleeding began which was taken to

be menstruation. However, later in the morning symptoms of an intra-abdominal hemorrhage were noted and a laparotomy was performed immediately. One and a half liters of blood were removed. A burst follicle on the right ovary was the source of the bleeding. The right adnexa were removed. The left ovary was apparently normal. Twenty-four hours later the same clinical picture developed. The abdomen was again opened and found to contain blood. This time a ruptured follicle on the left ovary was the source of the hemorrhage. The left adnexa were removed. The patient was greatly exhausted, failed to pick up and died three days after the operation.

Treatment of Inflammations by Alkalization.—In cases of purulent inflammations in the mouth (stomatitis, gingivitis), Lukomsky has resorted to the use of pilocarpine—subcutaneously or by mouth—from 0.5 to 1.0 cc. of a 1 per cent solution, two or three times daily—to increase the flow of saliva and thus effect an alkalization of the mouth. Pain ceases promptly and the inflammation speedily subsides.

Odesskiy Meditsinskiy Jurnal, Odessa

3: 263-332 (April) 1928

Use of Autopyotherapy in Purulent Pleurisy in Early Childhood. A. I. Skrotski.—p. 267.
Physiotherapy in Childhood. G. S. Levi.—p. 273.
Adhesive Preparations in Surgery. I. F. Samochin.—p. 279.
Epidemiology of Malaria in District of Kherson. T. I. Jatzenko. —p. 282.
Early Suppurative Mastoiditis in Fulminant Scarlet Fever. L. P. Orbant.—p. 285.
Rôle of Protective Forces of Organism in Acute Poisonings. E. A. Leibenson.—p. 289.
Case of Strangulation Ileus. I. I. Steinberg.—p. 294.
Osteosarcoma of Upper Jaw. S. F. Letnick.—p. 295.
Rural Medical Practice. V. M. Ginkovsky.—p. 297.
Case of Incarcerated Inguinal Hernia in Early Childhood with Resection of Intestine. A. D. Zvanecky-Zabolotnyj.—p. 307.
Therapy of Auricular Fibrillation and Flutter. G. I. Katz.—p. 312.
*Therapy of Congenital Hydrocephalus. I E. Kornmann.—p. 313.

Roentgenotherapy in Congenital Hydrocephalus.—Treatment with roentgen rays (1½ erythema doses filtered through 5 mm. of aluminum applied at three sittings) stopped the enlargement of the cranium during one month and during the second month the increase was only 5 mm. In the following weeks the fluid accumulated very rapidly, and the general condition of the child became worse. The parents did not consent to another roentgen-ray treatment and the child died. The postmortem examination showed that the brain had changed to a thin sack of fluid. Kornmann holds that roentgenotherapy can be recommended in the early stages of congenital hydrocephalus.

Nederlandsch Maandschrift voor Geneeskunde, Leiden

15: 1-66, 1928

Constitutional Tendency to Compulsion Neuroses. E. A. D. E. Carp. —p. 1.
Culture of Tubercle Bacilli from Secondarily Infected Material by Hohn's Method. F. J. H. van Deinse.—p. 17.
Juxtavesical Ureteral Stones. J. W. P. Fransen.—p. 25.
*Modification of Traction Apparatus. D. van Dorp-Beucker Andreae and G. Dijkstra-Volkers.—p. 32.
Physiology and Pathology of Pregnancy and Parturition. G. H. Van Waasbergen.—p. 37.

Modification of Traction Apparatus.—Dorp-Beucker Andreae and Dijkstra-Volkers describe and give pictures of a substitute for the chin strap in apparatus designed to apply traction to the cervical spine. By their modification the chin is relieved of pressure. They were influenced to make this change by the fact that in one of their patients, a girl, aged 6, treatment of spondylitis of the cervical spine with Glisson's traction apparatus continuously for a period of two years had resulted in an underdeveloped chin and protrusion of the upper teeth.

15: 67-128, 1928

*Case of Ulcerous Colitis in a Child. J. C. Schippers.—p. 67.
*Leukocyte Picture in Tuberculosis and Acute Infectious Diseases in Children. F. S. L. van Brero.—p. 76.

Case of Ulcerous Colitis in a Child.—Schippers recounts a case of ulcerous colitis in a child, aged 3, which continued with periods of improvement alternating with relapses for about three years. The patient was under Schippers' care for the last five months and was treated successfully, mainly by diet. Examined five months after she was allowed to go home, she was found in good condition and gaining normally in size and weight. She was having three or four formed stools a day; sometimes a little blood was to be seen in the evacuations. A roentgen-ray examination, made late in the course of the illness, gave results typical for the disease.

Leukocyte Picture in Tuberculosis and Acute Infectious Diseases in Children.—In progressive tuberculosis, pneumonia with complications, bronchopneumonia, acute suppurative meningitis and scarlet fever in children, van Brero found a distinct relative leukocytosis. Shifting to the left was distinct in acute tuberculosis, in pneumonia, bronchitis, bronchopneumonia, scarlet fever, typhoid and complicated whooping cough. Toxic granulations were present in appreciable quantities in all the infectious diseases investigated except uncomplicated whooping cough, polyarthritis rheumatica and clinically inactive tuberculosis. In the absence of shifting to the left and of toxic granules, the sedimentation speed was normal. If shifting to the left and toxic granules were present, the sedimentation time was shortened and the globulin content of the blood was increased. No connection could be made out between the complement fixation reaction and the blood globulin or the shifting to the left.

Nederlandsch Tijdschrift v. Geneeskunde, Haarlem

72: 2163-2290 (May 5) 1928

Aplastic Anemia. P. van Paassen.—p. 2164.
*Central Bone Abscess. C. H. Lenshoek.—p. 2177.
Erythema Pernio and Erythema Indurativum of Bazin. K. Edel. —p. 2183.

Central Bone Abscess.—Lenshoek reports five cases of bone abscess in youths between 14 and 23 years of age. In three there was a history of trauma; in one, of infection in the extremity affected; in one, of typhoid. The course was chronic, with intervals of freedom from pain and return of function. In all, operation was finally resorted to and a cavity filled with granulation tissue or green or yellow pus was found in the bone. In two cases, the staphylococcus was cultured; in the case that developed after typhoid, the thick, yellow pus was sterile. In the others, bacteriologic examination is not mentioned.

72: 2325-2427 (May 12) 1928

Placenta Praevia. G. C. Nijhoff.—p. 2326.
*Beriberi Heart. W. C. Aalsmeer and K. F. Wenckebach.—pp. 2340 and 2364.
*Liver Diet in Pernicious Anemia with Return of Free Hydrochloric Acid. P. A. Heeres.—p. 2372.

Beriberi Heart.—Among the earliest of the pathologic changes in beriberi is enlargement of the entire heart. As the disease progresses, either acutely or chronically, the right side suffers more than the left. In the right heart there is progressive dilatation and insufficiency. From this there result stasis in the vena cava and congestion of the liver. When the tricuspid valve no longer closes, the swelling of the liver with the stretching of its capsule is the cause of severe epigastric pain. Engorgement and throbbing in the veins of the neck, with cyanosis, are a part of this symptom complex, and hydrothorax and renal engorgement may occur. The lungs do not become congested, the dyspnea being due to other causes. The usual cardiac remedies and diuretics have no effect, but the heart responds promptly to vitamin B. The theory advanced by Aalsmeer and Wenckebach to account for the difference in the effect of the disease on the right and left heart is based on the anatomic and functional differences between the two sides of the heart. They formulate the law that in equally progressive weakness of the entire heart muscle, the fatal outcome will be due to the lesions of the right heart.

Liver Diet in Pernicious Anemia with Return of Free Hydrochloric Acid.—Heeres' patient, who at the beginning of treatment with liver had no free hydrochloric acid in the stomach, had, after nine months, free hydrochloric acid represented by 25 with total acidity represented by 55. The erythrocytes had increased from 920,000 to 3,580,000 and the hemoglobin from 17 to 82 per cent. (The hemoglobin rose to 50 per cent in the first week of treatment.) The color index was 1.47. She was then between seven and eight months pregnant. She was delivered of a living child at term. One day after the delivery the erythrocytes numbered 3,230,000 and the hemoglobin was 64 per cent.